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SIMULATION OF INSANITY.

(Concluded.)

By A. W. Hoisholt, M. D. Stockton, Cal.

I herewith submit the following two cases of simulation of insanity, which I have had the opportunity of studying during the past year.

Case 1. Isaiah Zumwalt, aged 64-65 years, of average height (5 feet 9 inches), gray hair and beard, eyes grayish blue, born in Missouri; father German, mother said to have been Indian; farmer and miner by occupation. Family history almost unknown. In California about fifty years; has resided near Placerville about forty years. In 1887 he, with a son and a companion, beat a neighbor very severely, for which he was arrested and fined two hundred and fifty days in jail. After serving one hundred and seventeen days, he claimed to be ailing; not being found sick, he was discharged from jail after paying the remainder of the fine. He is said to have been a man of a very quarrelsome nature, in whom saloon fights were at one time of common occurrence. During the one hundred and seventeen days in jail, he came in contact with an insane person who was temporarily detained there. He married a woman of bad reputation—half Indian (Cherokee)—about 1863, who bore him seven children. She is said to have been unfaithful to him on many occasions, and he was divorced from her in January, 1900. In July, 1897, one of his sons (he had four sons and three daughters) married a grass-widow, and in April, 1898, he went to live with this son and daughter-in-law, purchasing a small farm near Placerville and deeding it to the son. He was accused by the daughter-in-law of having made improper proposals to her on several occasions, which led quarrels between them some weeks prior to June 7, 1900. About the middle of May, he called on the district attorney of Eldorado County to learn how he could get hold of the property, which he had deeded to his son. After getting certain advice, it appears that he did not put it into execution. About the 25th of May, he is said to have been told by his daughter-in-law that if he could not keep the yard in order about the house, he was not good for much and might as well leave. About this time he was told by the son he afterwards killed that his (the son's) wife had declined to go to live with her husband and father-in-law on a piece of land he would purchase, whereupon defendant said, "I am going to make a big thinning down here some of these days." About two weeks prior to the shooting, defendant went to the house of a neighbor, about half a mile distant from his own, to get a pistol belonging to him. When he was handed the pistol, he made the following statement to this neighbor: "You have always been a friend to me, and if anything happens in the next two or three days, all I want you to do is to see that I am laid out straight.' At a dance near there on the evening of the 6th of June, he was noticed to keep close watch of his son and daughter-in-law. On the morning of the 7th of June, 1900, his daughter-in-law and divorced wife returned from Placerville in a wagon driven by a hired man, who tied the team under an oak tree and took a seat on the porch while the women went into the house. While sitting there, he saw the defendant walk restlessly up and down in front of the house, and then enter a room from which he soon afterwards emerged with a rifle in his hands. He almost immediately went to the front of the house, and the hired man heard three shots in quick succession. He had fired the first shot through two open doors into a second room in which his son was sitting, killing him instantly, and following the two women, had killed his divorced wife—who ran out of the house, her body falling ten feet beyond where the top of her head lay—and his grandchild in the arms of his daughter-in-law. The latter fled through an inclosure, and, when barred by a wire fence, she held up her arm, begging him not to shoot. As he aimed at her anyway, she let herself fall to the ground, and crawled through under the fence. The first shot, after killing the baby, passed through the fleshy part of her right arm. A second shot went through the body of the infant and grazed her left arm. A third shot made a superficial wound in each breast. A fourth cartridge failed to explode. He now returned to the house for more cartridges, while the wounded woman ran across a field to a neighbor's house. The murderer soon afterward appeared, rifle in hand, at this house, asking for admission to find his daughter-in-law. His neighbor told him she had escaped, to the woods. He then said: "If any of you folks take any interest in them people over there at the house, you had better go over and attend to them. I have killed George, and I have kiled the old lady. I hated to kill George, but I had to to get the women folks, and the one I wanted most [his daughter-in-law] has got away from me. I may go to hell for what I have done, but I can't help it." While at this neighbor's house, defendant made a division of his personal effects to be given to two of his sons, going into details as to what each one was to have, and dictating a list of accounts owing him for buggy hire, and directing that his older son should collect the money. To the person who wrote down his dictation, he said: "I have killed George and the old lady. You will find one in the house and the other in the back yard. The old woman caused me a lot of trouble, but she will never make any more trouble for anybody else. I hated to kill that boy, but I had to." Soon after this, and before the officers arrived, he asked another neighbor to tie a string to the trigger of his gun and pull it when he told him to (implying that he contemplated suicide); when the person addressed refused to do this, he attempted to pull his pistol, but was prevented from doing so by bystanders. After the officers had arrived and while they were putting the hand-cuffs on him, he said to his neighbor: "Well, do you remember what I told you two weeks ago? Now, you see what has happened." To his eldest son, who had assisted in disarming him, he said: "You know you are not doing right in keeping me here and allowing the officers to take me. You know if I am taken by the officer I will never see the light of day again." He was taken to the jail that evening.

After a couple of days, the defendant was interviewed by a physician in the jail, who found him silent, with the exception that he would utter a whine, and point his finger at his forehead. His pulse was about 72-76, temperature normal. He appeared to have an excellent appetite, which continued to about the time of the court trial. He seemed quite well physically, bowels regular, slept well, was cleanly in habits; he would get out of bed, but walked as if weak in the lower extremities; seemed to be anesthetic in upper as well as lower extremities—a pin could be made to pierce the skin without apparently causing any pain. Pressure over certain nerve-trunks seemed to cause great pain. He was never observed to be emotional—was never seen to weep, but there was a blank expression to his face, and in other respects he acted as he did when examined on September 18, the first day of his trial. At this date, and when examined on several days following, the defendant was found prostrate in bed; lies at first motionless, with vacant stare. Pupils equal, react promptly but slightly to light. Now and then (at long intervals) he utters a peculiar, high-pitched moan. The eyes show fixed gaze, but afterwards wander around the walls and ceiling of room; at times head is slightly raised from pillow. Face shows no inequality; when mouth is opened by depressing chin, it is held open for some time in same position. The tongue is seen lying back in mouth, retracted toward base. Shouting into right ear (he is said to be deaf) to put out tongue, it remains motionless; it is then taken hold of with forceps and pulled forward, and he is told to move it from right to left, which is done to some extent. Afterwards, when told to move it, it remains motionless. The extremities at first are quiescent, with the exception of a certain tremor about hands and a similar slight movement of fingers. The left arm is taken hold of and moved in different directions, when a certain resistance is met with. This arm is then lifted over the head, half flexed at elbow, and held that way for a moment. After this it stays in this position. It is then put down, and the right arm is put in a similar position, and remains so. While this arm remains in a flexed position over head, the left arm is moved up and down; lifted up repeatedly, it drops down on the bed-clothes in a completely relaxed state. The left arm is now again put up (right arm resting on the bed), flexed at elbow over the head; it remains in this state eighteen minutes, when it slowly drops on bed amid groans of patient. During the interval of eighteen minutes, the right arm is lifted above head, but immediately drops in a relaxed condition; and the lower extremities fail to remain in the condition they are put, but show strong muscular force when an attempt is made to flex beyond 65-70 degrees. Sensation is intact in lower extremities—present in about equal intensity upon pricking with pin; no reaction in upper extremities when pricked with pin. Knee-jerks normal and equal. When asked to get out of bed, there is no, or very slow, response. Finally, when assisted, he sits up, supporting himself with left arm, shaking his head slightly at times, and at long intervals giving a moan. He slowly puts out his feet, puts them on the floor, and, when somewhat assisted, gets up suddenly and staggers on the floor as if dizzy, walking up to the wall, looking up and down the same, and gazing at the ceiling, then puts out his hands, feeling at the boards, finally putting his entire attention upon a crack between two boards, and tries with his finger-nails, as if expecting to be able to separate them, as if imagining that there is a door in the wall. After standing for a while, busily engaged in that manner, he moves to another part of the room and repeats the same maneuvers, now and then gazing up and down the walls at the ceiling and uttering a high-pitched, suppressed moan. Examination of heart and lungs reveals no symptoms of organic disease. On the evening of the first examination, under an oak tree and took a seat on the porch while the women went into the house. While sitting there, he saw the defendant walk restlessly up and down in front of the house, and then enter a room from which he soon afterwards emerged with a rifle in his hands. He almost immediately went to the front of the house, and the hired man heard three shots in quick succession. 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After standing for a while, busily engaged in that manner, he moves to another part of the room and repeats the same maneuvers, now and then gazing up and down the walls at the ceiling and uttering a high-pitched, suppressed moan. Examination of heart and lungs reveals no symptoms of organic disease. On the evening of the first examination, his pulse was 100; on the following days and evening, it was about 80; the temperature per rectum was about 99 degrees. His bowels are regular, passes on an average of about a quart of urine daily, using tin can put under the bed. Urine removed by catheter is found normal. When in the courtroom on the different days of the trial, the defendant shows the same vacant stare, the gaze being fixed on the ceiling, going every one-half to one minute successively over the entire surface of the same, then looking straight forward in the distance for a moment, he commences to look fixedly at one thing or another all over the floor, uttering a peculiar, short, whining moan. After a while he again looks at the ceiling, and so on. On some occasions he suddenly jumps up, carrying the chair with him, eyes fixed on the distance as if to go to some imaginary person or point, giving evidence of great bodily strength in his efforts to get up. He also here goes to the wall, fingering it as if confused or looking for something behind it. Now and then one notices a peculiar spasmodic action of the lower lip, which at a distance has the appearance of a mumbling to one's self, but which, upon close scrutiny, can easily be seen not to be the movements of the lip in an effort to whisper. Skin is normally moist, respiratory movements of normal depth, pulse of about normal pressure; extremities are fairly warm to the touch and not cyanotic. Tongue is clean and moist. This behavior is day after day the same during the whole trial.

The jury returned a verdict of guilty of murder in the first degree, and defendant was sentenced to be hung about two months from the date of the sentence. Up to the time the sentence was pronounced, about the same appearance was kept up, except to show a little more activity—he offered the deputy sheriff a chew of tobacco at one time, and at another time got hold of a table knife in the presence of a number of people, and appeared to make an attempt to cut his throat. After receiving his sentence, he led the deputy sheriff off some little distance from the others, and said: "You have always been a friend to me. Why don't you kill me?" The deputy sheriff made a reply to him, and then he said that he had not been able to hear what was going on—that his head hurt, and that his ears were stopped up so that he could not hear. The next day he talked with every one who spoke to him. He said to the sheriff: "Now, I have been tried, and they have gone through the case and I have not heard any of it. They tell me now that they have found me guilty and that I must die. I know that I have transgressed the laws of God, and that I must pay the penalty of it with my own life, but I am ready and willing to go." He complained that his head hurt him awfully, and asked to be kept in jail for a few days before being sent to the penitentiary, so that he could continue taking some medicine that a doctor was giving him. He told his son Tom that he did not want them to appeal the case—that he had to go and that they were just throwing the money away. He afterwards said to the district attorney that his case should have been looked into more closely—that his mother died of head trouble—that he has a brother in an insane asylum, and a brother and two sisters who can hardly hear anything. When asked why he picked at the cracks when he was being examined, he said that he was looking for his gold. He at this time talked in a natural tone, made natural gestures, only pausing occasionally as though to collect his thoughts, and occasionally putting his hand to his head. Two days

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after the judgment of death had been pronounced, the prisoner executed a deed of some property to one of his sons. On the following day this son sent him a dinner, which he ate in the evening about 10 o'clock, and shortly afterwards went to sleep, and was found in a stupor at noon of the next day, when the court physician was summoned. When aroused, he appeared to suffer great pain in the stomach; his temperature was 104 degrees, and rose to 106.5 degrees that evening. The temperature remained high a couple of days, and then gradually went down to normal. His pulse was small and rapid, the mucous lining about the mouth and throat was quite congested. The physician pronounced it arsenical poisoning. Z. was removed to the penitentiary October 25, 1900, where his condition remained stationary for a time; after some weeks he gradually grew worse, and died February 5 of this year.

The simulation in Z.'s case is difficult to place in Professor Furstner's classification; it does not belong under the heading of dementia (Blodsinn), nor under that of cases with diversified symptoms, as the prisoner apparently made a decided effort to produce a disease picture of stuporous melancholia. Whether he had had opportunities in the past of observing such a case, or whether the knowledge was imparted to him during his incarceration, could not be ascertained. The symptoms of silence, expressionless face, fixed gaze, muscular immobility, tension, and cataleptiform state of the muscles, moaning, etc., would make one think of stuporous melancholia, but, like most malingerers, the prisoner in displaying some of these symptoms of insanity goes too far. His catalepsy is under the control of the examining physician, who, by giving the prisoner a chance to do some muscle-reading, is able to make the muscles relaxed or rigid at will. The drill-like moving of the fixed gaze from one object to another in the room and in the distance, and the nervous and searching examination he makes of the walls of the room, which he afterwards explained were attempts to find his gold, are rather unusual in a case where catalepsy is present. It is especially the somatic symptoms, over most of which he has no control, which are not in keeping with the outward manifestations. He continues to have a good appetite, his bowels are regular, his skin moist, his tem-
It is very probable that Z. succeeded in
perature normal, his habits cleanly, etc.
getting hold of some poison (arsenic?) a few days after he received his sentence. He had directly intimated to the deputy sheriff that he wished to commit suicide, and, in asking to have his transfer to the prison delayed, evidently hoped for an opportunity to get poison, which he undoubtedly succeeded in getting. After the acuteness of the symptoms of the physical illness which set in abruptly at the jail (the question of poisoning was not looked into) had somewhat subsided, the prisoner was transferred to the penitentiary, where he continued to be ailing, presenting symptoms of a chronic gastritis. He is reported to have died from exhaustion a few days before he was to have been hung.

The second case which herewith follows does not show the energy, self-control, and knowledge of role adopted which was met with in Z., but demonstrates the exertions of a criminal possessed of a limited intelligence, who racks his brain in efforts to escape the consequences of his crime, and succeeds in making but a crude, silly, and absurd disease-picture.

Case 2. W. C. N., who was arrested April 29, 1900, charged with having burglarized a cigar store a few days previously, had been trying to earn a living in Stockton working at different things; last, a drayman. He is twenty-eight years old; mother said to have been hysterical when young—no other history of neuropathy obtainable. He has gone to school very little; was very wild as a boy, but little disciplined at home; has not served as apprentice in any trade, but has earned his living doing various kinds of manual labor; among other things, has worked as janitor and helper around athletic clubs, attending prize-fights, etc. In 1897 he first came in conflict with the law, being arrested in Oakland on the charge of petit larceny. He was convicted and sentenced to six months in jail. When he arrived in Stockton in February, 1898, he first obtained work in the public library there. After he had worked there a few weeks, the money drawer, containing a small amount, was found to have been robbed one morning, and when, shortly after this, certain quartz specimens were missing, he was suspected and discharged. After loafing about for some time, he obtained work at the Athletic Association, where he earned his living by helping the janitor and as masseur. After working here a few months, during which members frequently complained of having lost articles of various kinds which they thought safe in their lockers, and which were finally traced to him, he was discharged. He then succeeded in getting employment as private night watchman in a certain part of town. While thus employed, several burglaries were made on his beat; in one case, in a grocery store where ten boxes of cigars were stolen. The crime was traced to him. When accused of this, and arrested, he began to act queerly, and was sent to the detention hospital for persons accused of insanity, but when acquitted (by reason of sympathy for his wife, who was at the time *enciente*), he soon left the hospital, and nothing more was heard about his insanity. In the fall of 1899, he rented a horse and wagon, starting a business as expressman. Claiming to be the owner of the team, he, a short time after this, succeeded in obtaining a loan of $50 from a pawn-dealer, and for some time the latter was ignorant of the fraud. When he finally learned the truth, he forced N., under threat of exposure, to promise to pay back the loan with interest, in monthly instalments. N. had been making payments for some months to the pawn-dealer, when, at the end of April, 1900, a cigar store, the rear of which was used as a gambling resort, was found to have been burglarized. Its money-drawer, containing some $36 in various denominations, had been emptied early in the morning, shortly after 6 o'clock, at which time the place was closed. Shortly before this time, N. was talking to the employee in charge of the store, and was present when the money was counted and put in the drawer. For some weeks previously he had frequented the place, taking part in the games whenever he had money; on two of these occasions he had snatched the keys away from the boy employed in the front part of the store, and, under the pretense of fixing the key-chain which he had broken, had taken the keys—as was proved afterwards—to a locksmith, whom he asked to make duplicate keys.

On the afternoon of the date of the crime, the police already suspecting him to have committed the crime, he was called before the district attorney, who subjected him to a severe cross-examination lasting a couple of hours, during which ordeal he showed great shrewdness and quick comprehension in answering questions relative to the crime and his own movements on that day, giving such a plausible account of himself that the officers began to doubt his guilt. A day or two afterwards, when the locksmith identified the keys found on N.'s person as keys he had made for him, which keys fitted the doors at the entrance to the store, he finally admitted his guilt, and confided to his attorney where he had hidden the money, and drew a diagram of a cellar under a sidewalk, indicating so accurately on the slip of paper where the money could be found, that the officers had no difficulty in locating it. About this time it was reported at the jail that N. was acting queerly. On a certain occasion he told the jailer to send for a physician, as he felt he was going to have a fit, to which he said he was subject. When the physician arrived, he found N. very restless and emotional, marked tremor was present, but there was no evidence that he had recently had an epileptic attack. The physician was sent for on two or three occasions with the same result. An inquiry into N.'s mental status was now ordered, and he was visited and examined at the jail by the writer every few days in the course of over two months. The history of epilepsy above referred to was looked into, but the evidence offered (statements of wife and a friend) was not of such character as to make one think that he had suffered from real epileptic attacks. When seen on May 14, he first claimed not to know the examining physician, whom he had met twice a week for months while he (N.) was janitor at the Athletic Association. Afterwards he mentioned a certain other physician, whom he could only have known through others, who did not exercise at the club-room, and whom, therefore, he had not met; he could not, however, locate his questioner, and when the name of the latter was mentioned, he emphatically said that he knew him well, but the person before him was not he. His answers to questions were made up of short sentences, consisting of the most simple words, some of which were repeated. In the midst of his conversation, in answer to questions, he would commence to cry, asking for his wife and child—this subject taking up, apparently, his entire attention, so that questions had to be repeatedly put to him to get his thoughts concentrated on the subject of conversation. When his cognizance of surroundings was inquired into, he would at first say he did not know where he was, whether he was in jail or a hospital or some other place; after wavering between one thing and another, would say, "They say it is a jail, but I don't know; they tell me it is," volunteering the further information, "I don't know how long I am going to stay here." Physical examination revealed no organic disease, with the exception of a mitral insufficiency, with some hypertrophy but well compensated heart's action. It was noticed that the frequency of the pulse-rate was much increased during the interviews, on one occasion reaching about 120. There were no paralytic symptoms; examination of the urine revealed nothing pathological. When questioned about his appetite, he said he couldn't eat; he had had nothing to eat for a long time. (The jailer reported that he had a very good appetite—enjoyed his meals, that his bowels were regular, and that he slept well.) He said his bowels had not moved for a week or two, and that he never slept—"I just lay down, I never sleep; I rest, that is all." When asked what town he was in, he said he didn't know, but if he would be allowed to look out of the window, maybe he could tell. When taken to the window, he said he didn't know, but he correctly pointed to north, south, east, and west when asked, and said he knew in what direction south was because the court-house was south of where he was. When asked if he was in San Francisco, he said, "Oh, I don't see no cable-cars, no street-cars." He stated in reply to a question that he had been in jail three weeks, which at that time was a correct answer. He said he didn't know why he was in jail—"They say I have stolen something, but I haven't." Asked if he thought he was insane, he said: "No, sir, I am not. People think I am, but I am not. Let them think so." In the course of the following two months, he showed with each visit an increasing loss of cognizance of surroundings and of memory for recent events and for persons whom he saw frequently during his incarceration. His vocabulary became more and more confined to short and simple words, and his answers showed more and more uncertainty—wavering between knowing and not knowing. "I don't know. I couldn't swear to it. Maybe I would remember if you told me." On one occasion he complained of not being able to sleep at night because he was being disturbed by people standing outside the door making faces at him. "They make fun of me, laugh at me, tell me I am a darned fool; say, 'I am going to your wife now,' but they don't tell this to me where I can reach them; they stand outside the door. I have to turn my head around so I can't see them. The other night a man came with a knife and said he was going to cut my balls out, but I am not going to have it." He also heard the voice of God—"I hear Him talk to me all the time." The jailer reported that, at times, when he thought he was being observed, he would box with an imaginary person, whom he appeared to be training, keeping up such a conversation as a boxing master would under the circumstances. He would say: "Be careful. I am going to give you one in the face"—and, striking the bed—"There, see, I told you so. Now I'll strike you somewhere else." Jumping around the cell in boxing with the imaginary pupil, he would occasionally strike the wall but would take great care not to hurt his fist. A tear was trickling down his cheek one day in the course of a weeping spell, and when his attention was called to it, he claimed not to feel it running down his cheek and not to know what it was. On one occasion he claimed that he owned a bookstore on B Street in Stockton (there is no such street in this town, but alphabetical street names are found in Sacramento), which street, he explained, was the street just south of La Fayette Street, pointing in the right direction of the latter street. A week or two afterwards he did not know that he had ever said he owned a bookstore on B Street, or in what town this street was located, or in what town he was himself. On this latter occasion, he said he had lots of money—a great, big pile—two or three thousand dollars; that his business was preaching, lecturing. At one interview, he said, when asked how long he was going to stay where he was, that God was going to liberate him that evening; after supper, at half past seven o'clock, God would open the doors, and he could then go where he pleased. When seen three weeks after this, he did not remember that he had ever said God was going to liberate him. He frequently made statements contradictory of what he had said at previous interviews. On July 13 (two months after the first examination, when he gave a correct answer as to time), he said he thought he had been in jail nearly a year, off and on; that he was eating all the time; that his bowels had been regular—moved sometimes twice a day. In answer to the question whether he deserved punishment, he said at first that he was an awful bad man; afterwards that he did not deserve punishment unless he did wrong. On one occasion when the conversation was turned to religion, he became very talkative, delivered a harangue much as a Salvation Army proselyte would do. In illustration: "You should read the Bible so you can understand it. It is harder to do good than it is to do wrong, and the temptations are so great for young men. They don't seem to think of God at all; they don't realize. If they would only think that God was their Father, then we would be better to-day. This would be a regular heaven here. . But they don't study it, they don't read it—won't look at it. It is an awful nice book to read if you would read it right—just a story-book; that is what it is—but true stories, though; that is the beauty of it." He at times tried to be witty, and on one occasion smiled for an instant at his own joke when making remarks about his lawyer looking like a priest. The amnesia for recent events appeared to be getting more and more marked with each visit paid to him in jail. He finally, four days before the commencement of his trial, did not seem to remember events two minutes after their occurrence. He was, for instance, interviewed at length in his cell, and when, less than two minutes afterwards, he was addressed in an adjoining room, he did not remember that he had been interviewed two minutes previously, nor even whether he had seen his questioner for days. He also showed greater mental dulness and lack of comprehension. He did not know what country he was a native of; did not know whether San Francisco was the name of a county or of a state.

At the trial, July 17-20, the diagnosis of simulation of insanity was made, the evidence of simulation being explained in detail. The jury found N. sane, and guilty of burglary in the second degree. When, after the verdict had been read, the prisoner was on the way from the court room to the jail, he threw off the mask of simulation, admitting freely that he had been malingering.

While the symptoms of simulation in the case of N. are considerably diversified, they are, in the main, a crude attempt to give a picture of dementia, and a dementia which is making rapid progress. The defendant appears to have the idea that an enfeebled memory is the chief symptom of feeble-mindedness. The memory-defects displayed stand out in marked contrast with the excellent memory entirely devoid of loopholes, and revealing a studied effort to hide betrayable evidence, which he showed when examined by the district attorney a few hours after he committed the burglary and but a few weeks prior to the demonstration of the symptoms of dementia. In his attempts to portray dementia, N. is incognizant of surroundings and time, and occasionally shows a difficulty in understanding what is said to him; in doing the former he exposes his effort to make a stupidly smart beating about the bush, when he said that he knew he was not in San Francisco, because he did not see any cable-cars, at the same time he contradicts the evidence of loss of intellect, which he gave but a few minutes previously, when he said he did not know whether San Francisco was a county or a state. N., like many feigners of insanity, happens to hit upon the less frequent form of hallucination, that of sight; he goes, however, a step farther away from the usual experience of insane persons subject to visual hallucinations, in being able to dispel the hallucination by turning his head in another direction.

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DISCUSSION.

J. W. Robertson, Livermore: I have listened to this paper with a great deal of interest. I know of no paper or textbook that gives anything like so full a discussion of a subject so important to all of us—for there is no physician who sooner or later will not be called upon to express some opinion as to the mentality of a patient. In California, as a rule, insanity is simulated merely for the purpose of escaping punishment, and it is sometimes most difficult to judge accurately as to the mental state. Yet nothing is more difficult than to successfully simulate insanity, when a trained observer passes judgment. You must remember that not all symptoms are mental, and that bodily conditions are vastly important. Each great classification has its own special symptoms that must not be confounded. With acute mania and melancholia we have bodily wasting, stomach disturbances, and certain skin conditions that are unmistakable. In certain demented conditions we have every evidence of organic lesions, while in the paranioiac, the freedom from ordinary physical ailments arouses our suspicion. It may be possible to successfully simulate certain paranioiac states, but only one thoroughly versed in this subject can do it. As a rule, either melancholia, mania, or dementia is attempted, and while the physical symptoms are wanting, the mental state, as a rule, is overacted. I well remember that in the case of Fredericks, who murdered a bank cashier in San Francisco, the overacting was so great that feigning was self-evident. When left alone he was fairly quiet, but the moment he was spoken to or visited, his outcries and gesticulations became so violent as to evidence overacting. Especially was this true in the court room, where all his motions were purposeful, and he only quieted when something of interest to himself was being testified to. Conviction at once restored his calm. A Chinaman tried before Judge Murphy well illustrates Dr. Hoisholt's point. When placed on the stand, to the question, "How old are you?" he answered, "My old shoes;" "Where were you born?" "My hat;" "What is your occupation?" "My coat," and so on indefinitely. These replies were so irrelevant that they could not deceive. His conviction also cured his dementia, and ever since his return to San Quentin he has been a model cook. No man can be a maniac constantly, and few are so violent that they will not become quiet long enough to answer even intelligently. Few dements are so demented; if they answer at all, they will answer to a certain extent responsively. The really trying cases are those who have committed some crime under the influence of a delusion and yet to the world appear sane and responsible. It is these cases who will not plead insanity, yet who really are insane. Our courts hold strongly to the "mad-dog" theory. In other words, a man must not only be insane, but so delirious and frenzied as to be unconscious of his actions. Recently a man became suspicious of his wife and believed she was trying to poison him. One day he came home, tasted the soup, and, with a curse, declaring to her that she had been at it again, pulled a pistol and killed her, yet because he was apparently rational after the event, he was tried, declared guilty, and our Supreme Court confirmed the sentence. As a rule, the more cold-blooded the crime seems, the less justification there is, the more liable is insanity to be the real basis for the crime. Sudden anger, justifiable passion, proper resentment for some deed done against one, is not insanity, yet it is for this class that temporary insanity is so often pleaded. To me there seems but one remedy. Let a criminal asylum be built within the walls of San Quentin, and let every one who pleads insanity as a defense of crime be judged. If found insane, let them be sent there. The community at large must be protected, and it is but right that any one who has committed a crime while insane should be sent there. Whoever commits such an act may do it again. It would be regarded not as a crime, but as a proper step for the protection of the public.

ERYTHEMA FOLLOWING INJECTION OF ANTIDIPHTHERITIC SERUM.

By FRANK P. GRAY, M. D.

Read before San Francisco Medico-Chirurgical Society, January 6, 1902.

REPORT OF CASES.

When Behring's antidiphtheritic serum began first to be used, his opponents urged that it caused numerous complications, including joint inflammations, fever, albuminuria, rashes, abscess, sloughing, etc., which they attributed jointly to the serum and the antitoxin, the importance of which was, no doubt, unduly exaggerated. Improvements in preparation and greater care in use soon eliminated many of these disagreeable results, and careful observation of a large number of cases proved that the remaining ones were due to the serum alone, and were not at all influenced by the amount of antitoxin it contained. This led to the use of more concentrated serums, with still further improvement. However, a few unpleasant symptoms continue to occur, concerning which there is considerable variation in experience as to the frequency and severity, as the following citations will fairly illustrate:—

J. Richard Armstrong ("Lancet," March 4, 1899) reports 122 cases treated in 1897 and 1898. There were no bad effects. One child developed scarlatinal eruption, accompanied by acute pains in the joints, ten days after the injection, disappearing in two days. The "Archives of Pediatrics," June, 1899, reports on 422 children admitted to Children's Hospital, Washington, D. C., suffering from various diseases. They were given immunizing doses of 100 to 500 units, according to age; only two developed urticaria. Committee of Clinical Society of London ("Practitioner," June, 1899) reports on 633 cases treated with antitoxin. Rashes were produced in about one-third of cases. Pain, and occasionally swelling about joints, were pronounced in a few cases. Even when used in large doses, no serious effects were observed. W. P. Northrup ("Medical Record," March 4, 1899) reported on 91 cases treated in New York Foundling Asylum in 1898. "No joint complications. . . . No pains, . . . and rashes but rarely observed." Dr. W. H. Park's report to New York County Medical Society ("Archives of Pediatrics," March 19, 1900), from 1895 to 1900, gave 6,500 cases immunized by antitoxin of New York Board of Health. "Three per cent had shown rashes, 5 per cent some febrile reaction, a number distressing symptoms, and, so far as known, none permanent injury." Dr. Park, however, so far recognized these disagreeable features as to devote his paper, contributed to the "Festchriff," in honor of Dr. Jacabi, to consideration of a method of so preparing serum as to eliminate this toxic property. Though nearly all regard these effects as being insignificant, none have been observed to agree with H. Gillet, who says, in "Journal Des Practiciens," March 23, 1901, "If serum does no good, it at least does no harm."

It would seem that the matter had been thoroughly investigated; and I would scarcely feel justified in reporting these few cases but for the much greater frequency and severity of the occurrence than the literature had led me to anticipate, or I had found in private practice. In combating the outbreak of diphtheria at the Farallone Islands' Lighthouse Station, antitoxin was used on the whole population, except one case of diphtheria which was already improving. These people are largely deprived of fresh fruits, meat, and vegetables, and entirely of fresh milk. Their drinking water is rain water, caught on their roofs and on artificial rain sheds, and preserved in excellent cisterns. While possibly slightly contaminated with bird lime, it is probably much nearer purity than the average potable water. I may remark, before giving details, that great care was exercised to observe the approved technique to sterilize the syringe and in preparing the part for injection, and that in none did the needle puncture show evidence of infection. The symptoms also would seem more like those of toxemia than of infection.

Case 1. Nursing infant of 7 months, in good health. Injected with 500 units June 19, 1901. No unpleasant reaction followed.

Case 2. Nursing infant of 8 months, in good health. Injected 500 units June 19. June 26 an urticarial ring about 2 inches in diameter, surrounding the point of injection, attended by marked fretfulness. There was no rise of temperature nor tenderness. Lasted 2 days.

Case 3. Girl of 3 years, just recovered from some throat affection, possibly diphtheria. Injected 500 units June 24. No unpleasant reaction.

Case 4. Girl of 2 years, in good health. Injected 500 units June 19. General urticaria, with severe itching and restlessness, began June 29, and lasted 2 days, without rise of temperature.

Case 5. Boy of 6 years. Well, but thin and frail looking. Injected 500 units June 19. Slight local erythema appeared June 24, lasting 2 days. Insignificant.

Case 6. Rugged boy of 10. Injected June 19 500 units, no reaction following.

Case 7. Poorly-nourished boy of 13, subject to tonsillitis. Injected 500 units in left arm June 19. On June 26 suffered from severe headache and malaise. On the 27th an erythema 3x5 inches appeared about injection point, attended by intense itching and severe pain in left arm and shoulder; general enlargement of lymphatic glands and some rise of temperature. Subsidence and recovery in 4 days.

Case 8. Boy, aged 10, victim of nasopharyngeal diphtheria. Injected June 19, eighth day of disease, 1,000 units. Neither benefit nor injury observed. Died from paralysis of heart at 5:45 P. M., June 20, 27 hours after injection.

Case 9. Healthy girl, aged 13 years. Recently had bronchitis. Injected 500 units June 19. Four days later she had a slight local erythema, lasting 2 days.

Case 10. Healthy girl, aged 14 years. Injected 500 units June 19. After 4 days there appeared an area of erythema 2x3 inches, slightly itching, locally, lasting but one day.

Case 11. Strong girl of 14. Injected 500 units June 19. June 24 occurred slight local erythema, with much itching, lasting a day and a half.

Case 12. Healthy girl of 16, sister to 11. Injected June 19 with 500 units. June 26 large local patch of erythema, with marked swelling and very intense itching. In a few hours it had reached a degree well characterized as multiform, affecting all parts. Itching was intense, causing great suffering. The scalp, palms, and soles were affected intermittently. There was anorexia, severe headache, and total loss of sleep for two nights. The suffering was not relieved by any local application. Slight alleviation and some sleep resulted from the use of morphin sulphate, gr. $\frac{1}{4}$, and atropin sulphate, gr. $\frac{1}{120}$, every 4 to 6 hours. Temperature rose to 100° for two days. There was then gradual subsidence, and nearly complete recovery by the sixth day; but occasional wheals appeared for some days longer.

Cases 13, 14, and 15. All adults, the latter a housewife, the other two light-keepers; each injected with 500 units June 24; suffered no unpleasant reaction.

Case 16. An adult housewife, rheumatic, having chronic organic heart lesion. Injected 500 units June 24. After two days there was slight itching nothing more.

Case 17. Adult male, light-keeper. Injected 500 units June 24. July 1 there was slight local erythema, lasting a few hours, and itching severely.

Case 18. Male adult, foundry apprentice. Injected 500 units June 24. In a few days had a slight itching erythema for a day and a half.

Case 19. Male adult, physician. Injected 500 units June 24. On June 27 a few small petechiæ appeared about the injected part, with trifling itching.

Case 20. Male adult, light-keeper. Injected, June 24, 500 units. On June 30 a small patch of local erythema appeared, 3x5 inches in size, attended with intense itching and considerable swelling. Duration 2 days.

Case 21. Adult, housewife, well, nursing an infant. Injected, June 24, 500 units. On June 27 intense itching and appearance of a spot of erythema 3x5 inches in size. The injected left arm and left side were painful on movement. Face flushed, but no rise of temperature. Duration 6 days to total disappearance.

Case 22. Adult female, teacher. Injected 500 units June 24. In a few hours there was a large wheal, $2\frac{1}{2}$ inches in diameter, about the site of puncture, without pain or itching, persisting for 24 hours. After two or three days there appeared an extensive erythema, involving nearly the whole arm, and accompanied by intense itching and considerable swelling. There was also some headache and anorexia. Temperature not taken. Subsidence was gradual, in 4 or 5 days.

Case 23. Adult, housewife, not very strong. Much exhausted by hard work and loss of sleep, incident to illness and death of case 8. Developed pharyngeal diphtheria, spots first appearing June 23. She was given 2,000 units into the right arm. No further progress of the disease, and spots cleared off by the 27th. June 26 there appeared a small spot, 2x3 inches, of local erythema. Itching was excruciating, and not relieved by local applications. Scratching aggravated it, and it extended to almost the whole area from shoulder to elbow, and the entire arm was swollen. Sleep was absent, except from short naps after ¼-gr. doses of morphin sulphate. Menstruation came on, being about a week early, and very profuse. There was extreme nervousness, reaching hysterical proportions. There were also severe cervical and lumbar pains, great muscular weakness, and weak and irregular heart action. The rash lasted with great severity for 4 days, and gradually subsided in 2 or 3 days more. The weakness, irregularity of heart, and pains were continued in some manner for two weeks longer.

Summary: 500 units, 21 cases; 1,000 units, 1 case; 2,000 units, 1 case. No unpleasant results, 7 cases, 30 per cent. Some unpleasant reaction, 16 cases, 70 per cent. Insignificant, in 10 cases, 44 per cent. Marked, 2 cases, 8½ per cent. Enough to cause some alarm, 4 cases, 17 per cent. The time of onset varied between one case on second day and one on ninth day, the greater number being five on the third day, and the next four cases on the seventh day. The duration was as follows: 6 cases, 1 day; 5 cases, 2 days; 1 case, 4 days; 3 cases, 6 to 14 days.

To the "Lancet" of April 1, 1899, Dr. Charles Bolton contributed an able article, entitled "Complications of Serum Treatment of Diphtheria." He has carefully examined 100 cases, observing rashes, pains in and around joints, fever, transient albuminuria, abrasions, abscesses, and sloughing at the seat of injection. The last three he very properly attributes to careless use, the others entirely to the serum, and says these symptoms may vary in degree with serum from different horses. Onset occurred in from 1 to 18 days, and the duration was 2 to 3 days. Rashes were in four forms of erythema, simple, multiform, scarlatinaform, or morbilliform. "On the whole," he says, "the complications caused by the serum, while at times very painful and inconvenient, are quite harmless." To such a conclusion my own experience would lead me to add that, in some instances, rashes may occur in a large per cent of the cases, and may, rarely, become alarming, and possibly dangerous.

ON SOME FORMS OF CONJUNCTIVITIS, CHIEFLY ETIOLOGICALLY.

By C. S. G. Nagel, M. D., Late Assistant Surgeon, Royal University Eye Clinic, Breslau, and Assistant Surgeon, and First Assistant Surgeon, University Eye Clinic, Bern.

Read before San Francisco County Medical Society, Dec. 10, 1901.

Believing that certain modern views regarding the pathology of the eye have hardly become part of the common knowledge of medical men, I have thought a short reference to some of them might not be amiss. Naturally I have chosen a chapter of most general interest, in the discussion of which I intend to base my remarks, in the main, upon personal experience. The etiology of so-called simple conjunctivitis as an affection *sui generis* has in part been established during recent years. It is of interest, though, to note that even in the pre-bacteriological era careful clinical observers had stated the fact that often the secretion of simple conjunctivitis would prove infectious. In 1884 Koch first described, from Egypt, the now so-called Koch-Week's bacillus as the cause of an epidemic conjunctivitis. Morphologically the same is a small and thin organism resembling the bacillus of mouse septicemia. It has been cultivated by Morax on .5 per cent agar, losing its virulence after three days. It is not stained with Gram's method, is not pathogenic for animals, incubation three days. Microscopically the bacilli remain superficial, do not enter into the tissue. Clinically we are dealing with a severe catarrh, with swelling and abundant purulent secretion, but without follicles, though often with phlyctenulæ. According to more recent researches, it appears that the affection may sometimes assume a chronic character. Corneal complications are rare, and, if present, are superficial. The differential diagnosis from ordinary scrofulous, non-contagious, swelling catarrh is often impossible purely clinically, though the epidemic character may show the way. The affection occurs at all ages, but more particularly up to 20, and lasts from two to three weeks in non-complicated cases. We finally note that this conjunctivitis, studied by a number of accurate observers in several countries, in widely separated localities, has so far absolutely not been found by authors equally competent, such as Fuchs, of Vienna; Gifford, of Omaha; Peters, of Bonn. In connection with this subject of great and special interest has become an epidemic at Hamburg, recorded by Wilbrand, Saenger, and Staehlin. They report on a careful study of 512 persons. Where the Koch-Weeks bacillus alone was found, the description of the conjunctivitis above given held true. Often, however, that bacillus was associated with diplococci that morphologically could not be distinguished from gonococci, as was confirmed by Professor Neisser himself, to whom specimens had been submitted, growing easily, however, in cultures, and staining with Gram's. This class of mixed infection showed follicles, and were far more refractory, in some cases even ending with true, scar-forming trachoma.

Another etiologically well-defined form of simple conjunctivitis is that caused through the diplo-bacillus of Morax-Axenfeld, first described by either author independently of each other in 1896. It is a subacute or chronic affection, and probably very frequent and widely spread. The writer may state here that he has first found the same and established its regular occurrence at Bern, where also he met with it very frequently, as had been his experience at Breslau, under Uhthoff-Axenfeld. It is mostly under the form of a not very severe blepharo-conjunctivitis, especially of the angles (hence its old name, ophthalmia angularis), that we meet with this disease, showing little tendency for spontaneous healing. There are no follicles, or at least very rarely (Gonlin) no pseudo-membranes, and little secretion. We have to add, however, that more recently still cases of an acute character have been reported. As a rule, it is a rather well-marked picture, so much so that the experienced can with probability make the diagnosis clinically. It is markedly infectious, but only for man. No age is immune; most cases occur among adults. Incubation lasts four days; mixed infections are rare; occasional corneal complications remain superficial, and prognosis is always good. Sulphate of zinc in .5 per cent, or even stronger solution, is for this form of conjunctivitis almost a specific, though experience has shown us that it must be used quite a while after the disease has ceased clinically and bacteriologically, otherwise relapses are very apt to occur. The bacillus of Morax-Axenfeld is a strikingly plump individual, quasi-rectangular, though some of the corners at least are a little rounded off. It resembles Friedlaender's pneumoniæ bacillus, also ozaena bacillus; but, in contradistinction to these, it shows a capsule only with special staining. The bacilli mostly lie free in the secretion, by twos, not rarely in chains. They do not stain with Gram's. In blood-serum cultures, at blood temperature, we find after 24 hours a somewhat slight unevenness of the surface, through the appearance of moist spots. During the second day, and later, there appear small, roundish, transparent depressions upon the culture, the blood serum becoming slowly liquefied. On removing the fluid, the surface looks eroded. This process of liquefaction will slowly extend somewhat, although the contents of the tube will not become wholly liquefied, since the colonies will die off after two to three weeks.

A third and last type, so far, of primary simple conjunctivitis etiologically well defined is that caused by diplococcus lanceolatus, *sive* Fraenkel-Weichselbaum's pneumoniæ diplococcus. The conjunctivitis caused through this microorganism presents itself as an eminently acute catarrh, with abundant watery secretion, containing here there some formed particles; it heals spontaneously after a few days, often almost critically. The skin of the lids often shows quite a characteristic pinkish edema, while the conjunctiva of lids and bulbus is extensively swollen, and the latter presents almost invariably, generally away from the corneal limbus and principally under the upper lid, a number of small, hemorrhagic, phlyctenular-like spots. It is doubtful whether follicles, if present, are caused by the disease. Such is the rather typical picture, often rendering it possible to make a probable off-hand clinical diagnosis. Sometimes, however, the inflammation is of such virulence as to resemble beginning or even florid blennorrhea, in adults as well as in newly born, in which latter the affection is of frequent occurrence. Children are altogether by far more liable to the disease than adults; with the latter the affection may become very protracted, or even absolutely chronic, a course extremely rarely only observed in children. As severer corneal complications are very rare, the prognostic importance of the early differential diagnosis, as against blennorrhea, is obvious. The occasional epidemic character first observed by Axenfeld, and the positive transmissions by Gifford and by Pichler, have established the contagiousness of the disease for man as well as animals, with an incubation of 48 hours. It is of special interest, though, that here, without doubt, a predisposition is requisite. One is struck with the prevalence of catarrhal affections of the upper air passages simultaneously with or preceding the conjunctivitis, and that the disease also appears to be more frequent in winter-time. Pneumococcus to a large degree being a normal parasite of man (*e. g.*, mouth), the thought suggests itself whether under certain conditions it might not become virulent. Occasionally the microorganism is found in sparse numbers on the normal conjunctiva. Apart from the primary conjunctivitis above described, it must be noted that to the pneumococcus partly are due cases of conjunctivitis, found with affections of the tear passages, such cases being caused through the streptococcus. The occasional strong virulence of the pneumococcus is proved by the iritic irritation it has caused in some cases reported by its ptomaines through the intact cornea. Parenthetically I would remind you that this, of course, is in no way a parallel case to its virulency in ulcus corneæ serpens, with dacryocysto-blennorrhea, where there is always a primary defect of the corneal epithelium.

I pass by the more or less as yet doubtful forms of primary, simple staphylococcic and streptococcic conjunctivitis. With regard to the clinically so-called blennorrheic conjunctivitis, we have to state that the chief result of bacteriological research is the fundamental fact that this is not by any means caused solely by the gonococcus. We have already referred to the pneumococcus in that regard; the staphylococcus aureus and bacterium coli have here also been met with. It is to Groenouw that we owe the most extensive series of systematic examinations in connection with this subject, who also states expressly that he has met, though rarely, with perfectly typical severe blennorrhea, in which gonococci could not be traced, in spite of the most painstaking examinations. According to my own experience, I am strongly inclined to think that the percentage of the severer forms of blennorrhea due to gonococcus is larger by far than with other micro-organisms, and I have never had occasion to regret a favorable prognosis given, because I had failed to find gonococci. This is also the standpoint of Greef, of Berlin; and Axenfeld states even directly that mild gonorrheic conjunctivitis is an absolute rarity. Still, the question is not yet settled finally; we require by far larger statistics. A very able and decided opponent to the view expounded above is Fr. Schanz, who denies absolutely the prognostic value of the finding of gonococci. The number of joint affections consequent upon conjunctivitis gonorrheica is still very small. Of endogenous conjunctivitis, with urethritis gonorrheica, especially when complicated with arthritis, there are some twenty cases now on record, whether caused by toxins merely or the gonococcus having been carried through the circulation as well, remaining largely a matter of speculation.

I should finally like to briefly point out the principal topics under discussion, as far as etiology is concerned, with regard to pseudo-membranous conjunctivitis. The difference clinically between a severe and a mild form is very marked indeed. With the former are found almost exclusively Loeffler's bacillus diphtheriæ and streptococcus, mixed infections of the two being particularly common, Pseudo-membranes are also not infrequently found in severe cases of gonorrheic conjunctivitis. The most notable step forward in our knowledge of pseudo-membranous conjunctivitis is the fact, first established by Fraenkel and Uhthoff, that the milder forms can also be caused by Loeffler's bacillus, supplying us with a very obvious practical hint regarding prognosis and treatment, and doing away, for the eye also, with the etiological difference between croup and diphtheria.—Almost always only slight pseudo-membranes are found with Koch-Weeks' bacillus, staphylococcus pyogenes aureus, pneumococcus, meningococcus intracellularis, or bacterium coli. It would lead me much too far were I to attempt to pass in review the extensive literature concerning pseudo-diphtheritic, xerosis, and the virulent Loeffler's bacillus. That the presence of the latter through its toxins is of fundamental import is conceded by all and seems practically proved in the serum treatment. Whether it be the real primary factor is, as in general pathology so here also, still subjudice; certainly it is a disposition necessary for the conjunctiva, traumatic lesions being among the predisposing causes.

These are the classes of primary conjunctivitis in which, up to the present, definite bacteriological findings have been made. Want of time forbids any extended reference to the technical side of the bacteriological work alluded to throughout this paper, still I should like to point out the prime importance of sensitive culture media. Blood serum, particularly with a drop of human blood spread over the surface, I have learned to place highest. A further point is the importance of examining some formed particle of secretion, the examination of mere tear fluid proving over and over again deceptive. Particular consideration on removing such a particle has, of course, to be given to the possibility that it may have been contaminated from the outer skin. A further point, that never must be lost sight of in working along these lines, is the presence of normal saprophytes in the conjunctival sack, viz., xerosis bacilli, staphylococcus albus, and pneumococci. With regard to these it must be accentuated that they are easily outnumbered by the specific microorganism described, during the days of increasing intensity and the height of the affection just reached; while the bacteriological test after that period will often prove inconclusive, the normal parasite increasing again out of proportion, thus rendering detection of the others impossible though still present. It is easily understood that the progress of bacteriological diagnosis in conjunctivitis has led many to believe that finally we should be able to entirely discard the old clinical names for purely etiological ones. However, on a little reflection, it must be quite clear to the experienced that we shall never attain to that, though it is to be hoped that, particularly by the aid of still more sensitive culture media, we shall find out yet more specific types. The degree of reaction against, and hence the clinical appearance for various bacteria is so variable, according to their own varying virulency, the susceptibility of the individual, etc., that, clinically, for vast numbers of concrete cases the bacteriologic examination will always, as it does now, come to naught. In conclusion, let me say that, for an exact diagnosis in conjunctivitis, the bacteriological examination is absolutely necessary, at least in all cases of acute catarrh in their beginning, since, as every one knows, they then resemble one another very much. Further, in every case of severe conjunctivitis, and finally, during epidemics, in this last case, for obvious practical reasons, as well as in the interest of epidemiology.

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NEW SURGICAL POINTS ON APPENDICITIS.

By J. Coplin Stinson, M. D., C. M.

In an article on "Appendicitis," a report of fifty-four consecutive operative cases, when to operate, points in technique, which I published in the "American Medico-Surgical Bulletin," June 13, 1896, I reviewed the several methods of treatment, and, from a study of the cases cited and comparison of the methods used by various physicians and surgeons, I then came to the following conclusions: "1. That appendicitis is strictly a surgical disease. 2. That an infected appendix should be removed as soon as the diagnosis is made. 3. That in many cases of appendicitis an inch-and-a-half incision is sufficient for operative treatment. 4. That if there is local or general infection, the abscess cavities should be freely washed out with hot saline solution. 5. That if drainage is necessitated, one or two capillary wicks should be used, instead of iodoform or other gauze packing, glass, or other stiff tubes. 6. That, to prevent hernia, the incision should be small, and, if drainage is necessary, a small wick should be used, and the wound closed, layer by layer, separately and accurately, with sterilized, chromicized tendon, or chromicized catgut sutures." Of the above fifty-four consecutive cases of appendicitis, in which I performed or assisted in operating upon while house surgeon at the New York Post-Graduate Hospital during 1893 and 1894, and since I left that institution, up to April, 1896, there were two deaths. These two fatal cases I assisted in operating upon while I was in the Post Graduate Hospital. Since April, 1896, I have operated upon sixteen additional cases of appendicitis, and so far all my operations for appendicitis have been without mortality.

In the article in the "Bulletin" I also described what I considered the best methods of excising the appendix. Briefly these methods are as follows: The mesentery of the appendix is separated by dissection down to the cecum, bleeding vessel or vessels being ligated with fine catgut; "the appendix is held up by the tip, and, after dividing in a circle the peritoneal and muscular coats of the appendix about one-quarter of an inch from the appendico-cecal junction, leaving the lymphoid and muscular coats uncut, dissect back to the cecum, with handle of the scalpel, the divided serous and muscular coats of the appendix. Next apply a narrow-bladed forceps transversely to the mucous cylinder close to the cecum to temporarily close the opening at appendico-cecal junction; then cut off the appendix close to the forceps, leaving only a small cuff of mucous membrane projecting beyond the outer edge of the forceps. Cleanse the cuff with a gauze pad wrung out of a 1-2000 bichloride solution; then suture the cut edges of the mucous membrane and lymphoid coats very closely and accurately together with fine silk on a fine needle. Disinfect united edges and line of suture; remove forceps, and suture accurately the peritoneal and muscular coats which have been dissected back to cecum. If the coats of the appendix are matted together, apply the narrow-bladed forceps transversely to all coats at the appendico-cecal junction. Next cut off appendix close to forceps, leaving only a small cuff of the divided coats projecting beyond the outer edge of forceps. Disinfect protruding mucous membrane, etc., and suture cut edges closely together with fine silk on fine needle; disinfect line of suture; remove forceps, and bury this line of sutures with a layer of serous sutures."

"The methods above described can be quickly done. In both only sufficient mucous membrane and other coats of the appendix are used to close accurately the opening in the cecum at the appendico-cecal junction, without leaving any tension on the line of sutures; and, after suturing is finished, there remains simply a line of sutures on cecal wall at the former location of appendix. If the appendix is gangrenous, and the softening process has extended even to the cecum, have an assistant pinch up the adjacent portion of cecum with a dry piece of gauze, to prevent extravasation; then remove the appendix and irreparably softened cecum, and infold cut edges of cecal wall, suturing the layers accurately together with fine sutures. This line of sutures is then buried with one or more layers of Lembert sutures."

These are the methods I use when sutures can be inserted, with the exception that I use fine chromicized catgut for sutures instead of silk. In those cases wherein sutures do not hold, the edges can be approximated by borated gauze packing, which assists in union. The writer has found this later method to be followed by satisfactory results.

By performing early operations, and by using short incisions instead of long ones, the mortality has been much lowered; less time is taken for the operation; less injury is done; the wound, being small, can be closed in less time and with few manipulations; healing takes place rapidly, without trouble; allows patient to get back to his work soon; and, on account of the shortness of the wound, there is little or no danger of a post-operative hernia, even if the wound were left open, as is sometimes done in suppurative cases. The writer has been able to remove an infected appendix in an adult successfully through less than an inch incision; and, in cases of acute appendicitis, with diffuse peritonitis without adhesions, has, through about a two and one-half inch incision, excised the appendix, withdrawn all infected intestines, etc., to the surface, removed all septic matter, shreds, etc., from the peritoneal cavity and the surface of the bowels, then, after irrigation and sponging, returned the intestines, used drainage, had good recovery, and no hernia post operative. In all cases the appendix should be removed, if this can possibly be done without interfering with the life of the patient. If, after a careful search for the appendix, one is unable to locate it within the peritoneum, by making an incision through the posterior layer of the peritoneum external to the cecum, it may be detected behind the peritoneum, whence it can be readily removed. At times during operations one finds the appendix reduced to nearly a fibrous cord, and buried in extensive adhesions; such a fibrous cord being located in the normal position of the appendix, should not be overlooked by the operator, but should be excised close up to the cecum, after the method already described by the writer. Sometimes at an interval operation, on account of extensive and firm adhesions, and the deep location of the cecum and adjoining coils of intestines, it is impossible to find the appendix unless irreparable damage is done in searching for it. In such a case the wound should be closed, and an operation performed later on if appendicitis again develops; and at the second operation, the appendix, being inflamed, can be readily located and excised. When adhesions are present, they should always be freely separated as far as possible, as the results subsequent to operations in many cases depend upon the restoration of the normal intestinal movements. When a local or general infection of the peritoneum is present, an abscess cavity or cavities should be freely opened; adhesions, when present, be broken up; all pus shreds, etc., cleaned out; all inflamed or thickened omentum excised; the appendix removed; and the abdominal cavity further examined, to be sure that no purulent mass has been overlooked. All pathological intestines, until normal bowels are seen and freely handled, should be withdrawn from the abdominal cavity to the surface, and covered with hot towels. The infected portions of abdominal cavity and exposed intestines, etc., should be freely irrigated with hot water or hot saline solution, as hot as the hands can stand, and all pus, shreds, etc., removed with irrigations, sponges, and the fingers, until all pathological materials are removed, and until the fluid used as irrigation comes away clear. The intestines are then dried and returned within the abdomen, to as near as possible their normal positions. This method of treatment should always be used in infected cases, and the operation thus performed has been found by the writer to be uniformly successful; whereas, if simply an incision had been made, pus evacuation and sponging and ordinary irrigation done, the result would have been, in all probability, just the opposite. After these extensive operations on septic cases, the wounds should be closed as far as possible by sutures, and the cavities or spaces of infection drained with two or more borated gauze wicks or strips, which are carried to the bottom of the infections, the ends being brought out, as far as possible, in a direct line to the abdominal surface.

In order to obtain the full benefit of capillary drainage, the ends of the strips or wicks must be placed in contact with absorbent gauze on the surface outside of the wound, and this gauze must be changed and fresh gauze replaced when it becomes saturated to the point of decreased power, as otherwise it will have little mechanical effect. Adhesions wall off the wick or other drainage apparatus in the peritoneal cavity in about thirty hours, when the gauze or wick is shortened, or entirely withdrawn, according to the indications presenting. The writer, as a rule, does not withdraw it entirely until the fifth day. The object in proceeding thus is to allow the intestine to come together as rapidly as consistent with safety, and thus obliterate the cavity formed by the wick or wicks. After this, if further drainage is necessary, carry a narrow strip of gutta percha tissue or gauze into the wound. A wick or gauze strip long enough to rest on the posterior abdominal wall adjusts itself nicely, is soft, causes no shock, and is easily removed. After its removal completely from the wound, drop in several minims of sterilized balsam of Peru, which facilitates healing and prevents sinus formation. A fecal fistula will not form from the use of a wick or strip, nor will adhesions follow its use; but some may if gauze packing, tubes, etc., are used for drainage. The writer prefers the wick or gauze strips to other methods of drainage. Gutta-percha tissue around the rolled gauze has several advantages over plain gauze strips, etc.; that is, convalescence is more rapid, less painful, fewer disagreeable local symptoms, while the wick covering prevents adhesions between the gauze and serosa.

The length of time the patient is confined to bed when drainage is used is not much increased, except in those cases wherein fecal fistulæ form. The duration of confinement, after an operation in which drainage is required, is lengthened only by the time it takes for the cavity to obliterate up to the skin surface, and the latter to become firmly and durably cicatrized. The writer insists that patients on whom drainage is used should remain in bed for about one week after the wound has firmly healed. This is done in order to obtain a very solid cicatrix, and thus lessen the chances of hernia. If a single wick or gauze strip has been used as a drain, and the balance of the wound has been sutured accurately in separate layers, such a small opening is left after its removal that the layers fall fairly close together, and unite about as well as if they had been sutured. Hernia, under most circumstances, does not develop after the use of such a drainage method.

From a study of the pathology, etc., of appendicitis, the writer draws the following additional conclusions to these he has already published:—

1. That, as appendicitis is strictly a surgical disease, the earlier it is operated upon, the better for the patient. 2. That cases operated upon early should have no mortality. 3. That, during all appendicitis operations, the appendix should be removed, provided irreparable damage is not done in attempting to find or remove it. 4. That, where there is a local or general infection, the abscess cavity or cavities should be freely opened, all adhesions separated, all pus, shreds, etc., cleaned out, all inflamed or pathologic omentum excised, and all pathologic and infected portions of abdomen be freely irrigated with hot water or hot saline solution; the intestines are then dried and returned within the abdomen to as near as possible their normal positions. 5. That fecal concretions are more apt to be present as exciting causes of appendicitis than foreign bodies. 6. That foreign bodies are sometimes present in the appendix, and are exciting causes of appendicitis. 7. That, when the appendix contains foreign material, it is more likely to be a pointed or heavy body. 8. That fecal concretions closely resemble some foreign bodies of light weight, *e. g.*, grape seeds, cherry stones, etc., and that, when one is in doubt whether the material is a concretion or foreign body, it should be carefully examined microscopically and chemically, to determine the exact characters. 9. That operations such as appendicitis, or somewhat similar operations, *e. g.*, those involving laparotomy, can be as readily, quickly, safely, and cheaply performed at the patient's home as elsewhere.

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CAMPHOROXOL AND MENTHOXOL IN SUPPURATION OF THE MIDDLE EAR.

By A. E. Phelan, M. D., Surgeon to California Eye and Ear Hospital, Consulting Oculist and Aurist to Veterans' Home, Napa, Cal.

Read before the San Francisco Society of Eye, Ear, Nose, and Throat Surgeons, Dec. 6, 1901.

These remedies contain as their active ingredient a 3 per cent solution of peroxide of hydrogen, combined with menthol, camphor, and alcohol. They are non-irritating and quite stable. In the early part of the year samples were secured, and, on account of the very favorable reports given by Prof. Stetter, of Konigsberg, I decided to give them a trial.

Case 1. Girl, aged 8 years, chronic purulent discharge from the left ear, dating from an attack of the measles three years before. The membrana tympani was almost completely destroyed. The discharge quite copious and very fetid. No pain or tenderness over the mastoid. She had been under my care for four months, the usual remedies being used, with very slight improvement. The parents strongly objected to an operation, and were willing that I should continue with the treatment. In February I began the use of camphoroxol, instilling a 10 per cent solution into the ear, after it had been thoroughly cleansed. In about ten days the discharge became less fetid in character and diminished in quantity. The improvement continued for some weeks, and I began to hope for favorable results, when the patient took a severe cold, developing the well-marked symptoms of the mastoiditis. I operated on the mastoid two days later, with favorable results.

Case 2. Young lady, aged 18, came under my care March 10, suffering from suppuration of the left ear, with mastoid symptoms. There was a large perforation of the membrana tympani and exuberant granulation tissue over the internal wall of the middle ear. The discharge was fetid and tinged with blood. There was marked tenderness over the mastoid. The granulations were removed by curetting, and the parts thoroughly swabbed with pure camphoroxol. The mastoid was painted with strong tincture of iodine. The ear was irrigated every four hours with boracic acid solution, and a 10 per cent solution of camphoroxol instilled into the ear immediately after. The pain and tenderness began to diminish in 24 hours. In two weeks only a slight tenderness remained, and the discharge had greatly diminished. A few days later there was a recurrence of all the symptoms, with great pain over the mastoid. The middle ear was swabbed with a saturated solution of bichromate of potash, and the same treatment continued. The unfavorable symptoms gradually disappeared, and the patient made a complete recovery in four weeks.

Case 3. Man, aged 70, with neglected purulent discharge from the right ear. Admitted to hospital August 13. Upon examination found meatus partially filled with granulations, which were removed by the curette. The drum membrane was almost destroyed. The ear was irrigated with 1-60 solution of carbolic acid and a 10 per cent solution of camphoroxol instilled into the ear three times a day for a week, and then reduced to twice daily. The discharge gradually lessened, and he was discharged cured in three weeks.

Case 4. Lady, 60 years of age. Acute purulent otitis media, with large perforation of the membrana tympani at the lower posterior quadrant. The ear was irrigated twice daily with boracic-acid solution, and a 10 per cent solution of camphoroxol instilled into the ear. Complete cessation of the discharge in two weeks.

Case 5. Young lady, aged 22, consulted me June 5 for an inflammation of the left ear of three weeks' duration. She had been under treatment during that time, and an operation had been strongly advised. There was a fair opening in the posterior upper segment of the membrana tympani and a fetid discharge. Great pain and tenderness over the mastoid, and one degree of fever. The family were strongly opposed to an operation, and I decided to try the oxols for a day or two. After thoroughly irrigating the ear with boracic solution, a 50 per cent solution of camphoroxol was instilled into the ear, and allowed to remain a couple of minutes each time. An ice bag was applied over the mastoid, and the ear irrigated every 3 hours with the boracic solution, and a 20 per cent solution of camphoroxol dropped into the ear immediately after. In 12 hours a decided improvement was noticed in all the symptoms, and the ice bag was discontinued in 48 hours. The time was gradually lengthened between each treatment. Three weeks after, the ear was treated twice daily with a 10 per cent solution. In three months the discharge had ceased, and the opening in the drum membrane closed. There remained considerable tinnitus, which, after a month's treatment by inflation every other day, entirely disappeared. The hearing was greatly improved, a watch being heard distinctly at five inches.

In all cases the oxols were continued for a few days after the discharge had ceased. I found that many patients would stand a 50 per cent solution without pain, while others would complain of a severe burning sensation lasting but a few moments, when a 10 per cent solution was used. A fresh solution of the required strength should be prepared each day. I believe that these remedies are worthy of a further trial, and that, by their judicious use in chronic otorrhea, an operation may sometimes be avoided.

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HYGIENE AND TREATMENT OF TUBERCULOSIS.

Read before the Alameda County Medical Association, June 11, 1901.

By T. B. Holmes, M. D., Oakland, Cal.

A disease that is as responsible as is tuberculosis for about one out of every seven deaths in our city, needs no apology for being discussed by this society.

The treatment of tuberculosis has been conveniently divided into four parts: Hygienic, climatic, dietetic, and medicinal. One of the greatest obstacles encountered in the control of phthisical patients is the indifference of the public conscience on the one hand, and the placid resignation of the relatives and friends of the individual patient on the other. A community or neighborhood will fairly stampede at the news that there is a case of smallpox in its midst; while they receive with indifference mingled with pity the intelligence that their next-door neighbor has consumption. Considering the protection they have in vaccination, the first is insignificant when compared to the slow but awful ravages of the second.

One of the great duties of the medical profession to-day is to enlighten and instruct the public conscience until it realizes the contagious and infectious nature of tuberculosis. One of the means by which much might be done to enlighten the public would be to publish tracts bearing on the subject and scatter them broadcast. Some very startling arguments could be incorporated in these tracts by comparing the mortality from tuberculosis with that from other well-known diseases, such as diphtheria, scarlet fever, typhoid fever, cholera infantum, smallpox, etc. Of too small import do we consider such subjects in our medical societies, unless our conclusions lead us to some further action.

Rigid adherence to the strictest hygienic requirements is a very important part of the treatment of this disease, and a still more important prophylactic measure. This is so well recognized by the profession to-day that it seems superfluous for me to say that a patient should not be allowed to spit around his room, or anywhere where the saliva is allowed to dry, the germs to float in the air and again to find their way into the lungs. In large cities, and especially in our manufacturing centers, something has been accomplished by placing spittoons in factories and public places, but phthisical patients should be prohibited from working in factories and the free mingling with others in public places, both for their own good and the public safety. What possible hope can there be for a consumptive who continues to be employed in a factory or store? Much has been accomplished by the constant agitation of the danger in trailing skirts; but the agitation should go on until there is not a skirt to be seen that reaches the sidewalk. The tuberculous patient should be isolated, not in the sense of being imprisoned, but he should not be permitted to mingle with others in business, in social or in school life, and the worst of all is the free mingling with others in the home; not only is it most dangerous, but the most difficult to control. It is practically impossible to do anything for most of these patients until we can get them away from the control and influence of their friends and relatives. I see no possibility of doing very much to stamp out this disease until there is a colony set aside where these patients will be compelled to go and remain. The patient can not be controlled at home even with a nurse; but the stage where the disease must be treated is before the patient is really in need of a nurse, and if left to themselves they will not long attach the necessary importance to the directions given them in regard to personal hygiene, diet, medicine, exercise, etc., nor will they remain a sufficient time in any climate to complete a cure unless they are compelled to remain there.

Many of these patients belong to the poorer and more ignorant classes, and are both too poor and too ignorant to receive proper treatment at home. A sanitarium, or rather a colony, favorably located, and conducted exclusively for tuberculosis patients, is one of the urgent needs of every state and municipality.

The excreta of phthisical patients should be passed in a vessel containing slaked lime, or in a 1-500 bichloride solution, and allowed to stand one hour before being disposed of. The best means of disposing of same is by fire, but if allowed to remain in the antiseptic solution until the germs are destroyed, it may be disposed of in the usual way.

Of the greatest advantage in the treatment of phthisis is a favorable climate. Patients in the first and second stages of the disease will improve on almost any medicinal treatment if in a favorable climate, as I have proved to my satisfaction by some years of practise in the mountains. This probably accounts for so many different drugs being brought forward at various times as almost a specific in tuberculosis. I have had remarkable results from elixir of iron, quinin, and strychnin, in the mountains; and remarkable failures from these and every other drug that I have tried. The altitude for consumptives should be from two to ten thousand feet, depending on the strength of the patient and the stage of the disease; the climate should be as free as possible from fogs and strong, cold winds, and sufficiently mild to permit the patient to live out in the sunshine most of the time. The eastern slope of the Sierra Nevada Mountains is more favorable than the western slope for the treatment of phthisis, for several reasons; there is not so much cold wind, and fogs are practically unknown; then there is very little storm, so that sunshine abounds to the point of becoming monotonous. Eldorado, Amador, Plumas, Sisson, and Modoc, and the eastern portions of Nevada and Placer Counties, California, and the mountain portions of the state of Nevada, are probably as good climate as Colorado and Mexico, and have the advantage just now of not being overrun with consumptives, as they never have been advertised extensively. In fact, almost the entire state of Nevada could be turned into a colony for consumptives with great advantage to the patients and no less to the state. The cases of tuberculosis that originate here are practically nil. The antiseptic and invigorating properties of sunshine are not the only benefits to be derived from a mountain climate; the larger use of the respiratory organs is not among the least benefits to be received. Men who have been reared in the regions referred to and who have never seen a gymnasium or ever respired beyond what they were compelled to, will expand from five to eight inches. It is a fact often referred to that professional singers and others who are obliged to breathe deeply seldom fall a victim to phthisis. The few cases of tuberculosis that I have seen originate in the mountains were of the bones, joints, or skin. Another observation that would go to prove the beneficial effects of systematic deep breathing, is the fact that most cases of phthisis begin in the least-used parts of the lungs, namely, the base and apices. All this leads me to conclude that systematic deep breathing is a most important prophylactic measure and a valuable aid in the treatment of tuberculosis. Patients first changing to a mountain climate should not go to a greater altitude than from two to five thousand feet, but go higher as they become acclimated and improve in health. This gradual ascension is necessary in most cases in order to obtain the best results. Many patients who have been benefited by a change of climate make a great mistake by returning to their former abode before entirely well, and many more by ever returning.

Tuberculosis means war, and war to the death, either of the patient or of his enemy, the bacillus of Koch; and if the patient is not fortified with a good digestion and excellent assimilation, the war is pretty sure to be all one way, and end disastrously. Tuberculous patients should reverse the old axiom, and "live to eat" until they are well. They must partake of more than an ordinary amount of nutritious food; with them it is not a question of holding their own, they must advance, and that against great odds; their vitality must be increased to the point where they can overcome and crush out the enemy; they must gain all they have lost before they are on safe ground, and then be on the lookout forever after. Their diet must not only be abundant, but of generous variety and temptingly prepared so that they will not become tired of the staple articles. Authorities differ as to whether the nitrogenous or carbohydrate substances should have first place. For most patients, I believe the carbohydrates are the most important; however, patients differ in tastes, and must have the same food in different proportions. It is the patient that is being fed, not the disease. Cream, cod-liver oil, and butter are important articles of diet, as are also fresh eggs, cereals, and meats, including poultry and game; vegetables should be allowed, and choice fruits in small amounts. The patient should be encouraged to eat by every reasonable means. Some advocate forced feeding, claiming that this and a favorable climate are all that is really beneficial or necessary in the treatment of this disease. Well, if the patients could be made to eat *enough,* I think the treatment has much to commend it, but that *enough,* I fear, would be the obstacle over which many would stumble and go down. Oils by inunction are valuable, and can be used to great benefit in the treatment of children and younger patients especially. Predigested foods are better than none, but I see little hope for the consumptive that necessarily has to be fed on them except for a short time.

Of medicines for this disease there are more than enough. As far as the antiseptic treatment of tuberculosis is concerned, there is no drug that has held the confidence of the medical profession so long, or so deservingly, as creosote and its derivatives. Some physicians claim that they can not get patients to take creosote, as it disagrees with the stomach. Any drug is liable to nauseate a patient if taken under protest. My experience with creosote has been quite the opposite, and I have given it up to twenty-five drops three times a day. Dr. Sainsburg, of London, gives creosote up to forty, and in some cases, sixty drops, after each meal, and claims that his patients' digestions always improve while taking the drug. Other writers go so far as to say that the only benefit derived from creosote in phthisis is due to its favorable action on digestion. Guaiacol and creosote are said to be borne well by patients who can not or will not take creosote. There are many vehicles recommended for the administration of this drug, but pure cod-liver oil or its emulsion has given me the best results. I find that patients take the oil better and do not tire of it so quickly when giving the creosote with it. Begin with five drops in oil after each meal, and increase one drop each day until you get the patient saturated with the drug. The oil can be increased as desired. Some patients prefer the emulsion to the undiluted oil. Dr. Arnold Chaplin administers the creosote, where the oil is not well tolerated for any reason, as follows:—

Creosote (pure Beechwood), ♏ 5; rectified spirits and liquid extract of licorice, aa; water, q. s.

The licorice employed here is a solution of stick licorice, which is more mucilaginous than the fluid extract, and thus better adapted for emulsifying the creosote. When giving creosote in large doses, I have never found it necessary to give any other drug for the pyrexia; the cough becomes less, and the general health of the patient, for a time at least, improves. But whatever may be said for creosote, it is far from being a specific in this disease. Strychnin in large doses, gr. $\frac{1}{30}$ to gr. $\frac{1}{10}$ four times a day is the best tonic where a vitalizer is needed. Atropin I have found to be the most useful, both to check the night sweats and control hemorrhage, and codein to check excessive cough. Tuberculin among the many cures deserves mention, as it still has some advocates, but those advocating the remedy claim it is only useful in pure or unmixed cases, and I am convinced there are few such, and then a drug that has been so thoroughly tried and that has fallen into such general disrepute is to be looked upon with suspicion. What drug has not been advocated as a cure for consumption, at some time? Nuclein is among the newer remedies that has its advocates, and from some use of the remedy, I believe there is virtue in it if given in large enough doses. Dr. Murphy, of Chicago, withdraws the air from the diseased portion of the lung with an aspirator needle, thereby collapsing that portion of the lung, and then binds it down much as you would strap an external ulcer, his theory being that the cavity in the lung will the more readily heal according as the surfaces approximate. Volumes have been written on the treatment of this disease, which seem to have no other use than to swell our libraries. The best medical treatment known will continue to be unsuccessful in this and similar climates, unless the disease is diagnosed and treated much earlier than when these cases usually consult a physician, and even then the most of them will only be retarded for a time; but in a favorable climate, with proper hygienic care, with outdoor life, systematic lung gymnastics, and other exercise suitable to the patient, with an abundance of nourishing food and a little medicine, I believe the prognosis of tuberculosis in the first and second stages of the disease is better than that of other chronic diseases. What we need is a colony set apart for the victims of this disease, where they will be sent as soon as discovered, and compelled to remain until fully well, and where they will receive the best care and treatment known to medical science. In selecting such a place, the climate should have first consideration. Until something of this kind is undertaken, I do not see anything better in store for us than to go on developing more cases of tuberculosis, to disseminate more germs.

IS ASTIGMATISM, LIKE MYOPIA, EVER PROGRESSIVE?

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It has long been an accepted fact among ophthalmologists that in not a small percentage of cases myopia is progressive. It is also accepted as a fact that myopia is an acquired condition, the rule being that the vast majority of new-born eyes are hypermetropic. Astigmatism has received but little attention in this regard, and the text books say but little or nothing as to whether this trouble may or may not be, like myopia, progressive. In fact, what little there is said seems to be in opposition to the idea that it may be progressive. Thus Burnett ("A Treatise on Astigmatism") says: "There have been some cases reported of progressive change in the degree of astigmatism, and in the direction of the principal meridians. In none has there been any measurement of the corneal radius; and, under these circumstances, we can not exclude a change in corneal curvature; but it is most probable that the change is due to alterations in the shape of the lens, either from changes in its substance or from a modified action of the ciliary muscle."

Landolt ("The Refraction and Accommodation of the Eye") says, "This congenital malformation of the cornea [regular astigmatism] generally remains stationary through life." Noyes ("Diseases of the Eye") says, "The defect [astigmatism] may be congenital or acquired; irregular astigmatism in the cornea is an acquired error, and some rare cases of regular astigmatism are acquired; but, as a rule, the regular astigmatism of the cornea is congenital." Thorington ("How to Refract") says, "Most cases of astigmatism are congenital, and some can be traced to heredity."

It will thus be seen that it is generally assumed among ophthalmologists that astigmatism of the regular kind is congenital, and that it does not, except in rare cases, change in degree during the lifetime of its possessor. In looking over my case books of refractive errors for the past 15 years, in which some 6,500 prescriptions for glasses have been recorded, I find that there is a very respectable number of cases in which astigmatism has increased in certain individuals; and I have compiled a table of such of those cases in which, from the methods of examination and the notes taken at the times of examination, there can be no reasonable doubt of the fact that such increases have taken place. In compiling this table I have not made use of many cases where, from the surrounding circumstances, there might be a doubt of the correctness of the results with some forty-seven cases, in which the surrounding circumstances admit of no reasonable doubt as to the correctness of the results achieved.

Out of the total number of individuals examined during the fifteen years there were some 4,787 cases of astigmatism. The forty-seven cases here presented are, therefore, about one per cent of the total number of cases of astigmatism examined. Had I placed in the table all the cases which seem to have increased in astigmatism, but in which there might, from the surrounding circumstances, have been a doubt as to the correctness of the results, the number of cases would have been 235, or about 5.50 and there some formed particles; it heals matic cases examined. It must also be remembered that not all the cases requiring a change of glasses returned to me for examination and further prescribing; but, when the glasses first given them did not continue to give satisfaction, went elsewhere for a new fitting. Hence, it will be apparent that there is a respectable percentage of astigmatic eyes that suffer from an increase of that malformation, just as there is a certain percentage of myopia which also increases.

It will also be noticed from an examination of the table that, in the great majority of the cases, some cycloplegic was used, either atropin in the younger individuals, or homatropin. It will also be seen that, in all cases, the trial case was the final arbiter to which recourse was had; while in many the keratometer and skiascopy were, in addition to the trial case, made use of.

Permit me now to call your attention to certain cases which are, so to speak, typical.

My associate, Dr. Morse, at the age of 30 years had to stop all work on account of extreme asthenopia. On examination under atropin, I found that he had an astigmatism of 0.50 D in each eye. The correction of this error gave him ease. But in 1893, six years after the first examination, he was found to have 1.00 D of astigmatism in each eye; and seven years after the second examination his error had increased another half dioptry, or a total of 1.00 in each eye. During these years many examinations of his eyes were made, which brought to light a steady and consecutive change of the axis of the cylinders. It is curious to notice this change. Thus, in the right eye the various axes were as follows: 10, 15, 160, 175 degrees, and in the left eye, 180, 5, 10, 5, 20 degrees.

T. A. S., age 22, student, was found, in 1893, under atropin, to have 0.50 D astigmatism in the right eye, and 0.75 D in the left. Six months later, again under atropin, his error was still 0.50 D in the right, and 1.00 D in the left. Three years after the second examination, the

	Male or Female...	Age......	Year of Examination.	Cycloplegic Used......	Method of Examination......	Amount of Astigmatism......	Increase...	REMARKS.
G. W.	F.	18	'93	atrop	javal trial case	1.25	.....	Schoolgirl and housewife. Health not good. Ovarian trouble.
		25	'00	homat	trial case	O. D 2.75 O. S. 1.75	1.50 0.50	
B. E.	F.	9	'91	atrop	skias trial case	1.00	......	Schoolgirl; health good.
		15	'97	homat	trial case	O. D. 1.50 O. S. 1.75	0.50 0.75	
L. M.	M.	10	'94	atrop	skias trial case	1.50	......	Schoolboy; health good. 9 D of hypermetropia.
		14	'98	atrop	skias trial case	2.50	1.00	
G. P.	M.	7	'97	atrop	skias javal trial case	0.50	......	Schoolboy; health good. Has 10 D of hypermetropia.
		10	'01	atrop	javal trial case	O. S. 1.25	0.75	
A. E. T.	M.	22	'93	atrop	skias trial case	1.25	.....	Student; health good.
		27	'98	none	trial case	O. S. 2.00	0.75	
A. S.	F.	25	'95	atrop	trial case	O. D. 0.50 O. S. 0.25	....	Schoolteacher; health good.
		29	'99	atrop	trial case	O. D. 0.75 O. S. 0.50	0.25 0.25	
H. G. W.	M.	25	'92	atrop	trial case	O. D. 0.50 O. S. 0.75	....	Dentist; health excellent. Increase first in one eye, then in other.
		27	'94	atrop	trial case	O. D. 0.50 O. S. 1.25	...... 0.50	
		28	'95	none	trial case	O. D. 1.00 O. S. 1.25	0.50	
E. R.	F.	12	'98	atrop	skias trial case	0.50	......	Schoolgirl; health good. Total increase 0.50 D.
		13	'99	none	trial case	0.75	0 25	
		15	1	none	trial case	1.00	0.25	
R. R.	F.	20	'94	atrop	skias trial case	0.50	......	Schoolteacher. Health good.
		26	'00	homat	trial case	1.00	0.50	
M. W.	F.	15	'93	atrop	javal trial case	O. D. 1.00 O. S. 0.50	....	Schoolgirl. Health fair.
		18	'96	atrop	javal trial case	O. D. 1.50 O. S. 0.75	0.50 0.25	
R. M.	M.	18	'89	atrop	trial case	0.50	.....	Student and civil engineer. Uses left eye for surveyors' transit. Total increase right eye, 0 25 D; left eye, 1.50 D.
		25	'96	atrop	trial case	O. D. 0.75 O. S. 1.50	0.25 1.00	
		26	'97	homat	trial case	O. D. 0.75 O. S. 2.00	...... 0.50	
C. W.	M.	12	'92	atrop	skias trial case	0.75	......	Schoolboy; health fair.
		19	'99	homat	javal trial case	O. D. 2.25 O. S. 2.50	1.50 1.75	
G. P.	F.	18	'92	atrop	skias trial case	O. D. 0.50 O. S. 2.00	....	Artist; health fair.
		19	'93	homat	trial case	O. D. 1.25 O. S. 2.00	0.75	
L. F.	M.	13	'90	atrop	skias trial case	3.50	......	Schoolboy; health excellent. Total increase 1.50 D.
		14	'91	atrop	skias trial case	4.25	0.75	
		15	'92	atrop	trial case	5.00	0 75	
D. W.	F.	20	'95	homat	javal trial case	1.00	......	Schoolteacher. Health good.
		24	'99	homat	trial case	1.50	0.50	
E. B.	F.	22	'94	homat	trial case	0.50	......	Schoolteacher. Health fair.
		27	'99	homat	trial case	0.75	0.25	
L. S.	F.	20	'91	atrop	javal trial case	1.50	......	Seamstress; 7.00 D hypermetropia. Health good.
		29	'00	none	trial case	2.00	0.50	

	Male or Female	Age	Year of examination.	Cycloplegic Used......	Method of Examination.......	Amount of Astigmatism......	Increase...	**Remarks.**
L. S.	F.	15	'93	homat	javal trial case	0.50	......	Schoolgirl. Health good.
		18	'96	homat	javal trial case	1.50	1.00	
E. E. W.	F.	22	'94	homat	trial case	0.50	......	Schoolteacher. Health good.
		23	'95	none	trial case	1.00	0.50	
H. E.	F.	15	'97	homat	skias trial case	0.50	......	Schoolgirl; left eye amblyopic after injury. Health fair.
		17	'99	homat	skias trial case	1.00	0.50	
J. C. M.	F.	24	'95	homat	trial case	O. D. 0.75	......	Housewife. Health good.
						O. S. 0.25	......	
		28	'99	homat	trial case	O. D. 1.25	0.50	
						O. S. 0.75	0.50	
A. E.	F.	24	'96	atrop	javal trial case	1.00	......	Student and schoolteacher. Health good.
		27	'99	none	trial case	1.50	0.50	
C. S	F.	26	'88	none	javal trial case	O. D. 2.00	......	Housewife. Health poor.
						O. S. 4.00	......	
		31	'93	none	trial case	O. D. 3.00	1 00	
						O. S. 4.00	......	
E. M. M.	F.	22	'94	atrop	trial case	0.75	......	Housewife. Health excellent.
		23	'95	none	trial case	1.25	0.50	
H. K. T.	M.	27	'93	homat	trial case	O. D. 1.75	......	Bookkeeper. Health good.
						O. S. 0.75	......	
		30	'96	none	trial case	O. D. 2.25	0.50	
						O. S. 0.75	......	
J. B.	M	15	'92	none	javal trial case	O. D. 2.50	......	5.50 D myopia; schoolboy; health fair.
						O. S. 2.50	......	
		18	'95	none	trial case	O. D. 4.00	1.50	
						O. S. 3.50	1.00	
S. A. T.	M.	22	'93	atrop	trial case	O. D. 0.50	.....	Student and college instructor in athletics; health good. Total increase in right eye, 1.25 D; in left eye, 1.25 D.
						O. S. 0.75	......	
		22	'93	atrop	skias trial case	O. D. 0.50	......	
						O. S. 1.00	0.25	
		25	'96	none	javal trial case	O. D. 1.25	0.75	
						O. S. 1.25	0.25	
		29	'00	homat	trial case	O. D. 1.75	0.50	
						O. S. 2.00	0.75	
F. L.	M.	21	'96	atrop	javal trial case	0.25	......	Student. Health poor.
		24	'99	atrop	trial case	0.75	0.50	
M. M.	F.	26	'91	atrop	javal trial case	2 50	.....	Housewife. Ovareotomy in 1898.
		27	'91	atrop	skias trial case	O. D. 4.00	1.50	
						O. S. 2.50	......	
L. B.	F.	22	'91	atrop	skias trial case	O. D. 1.75	......	Housewife. Health excellent. Given to fancy work.
						O. S. 0.75	......	
		26	'95	homat	trial case	O. D 2.00	0.25	
						O. S. 2.00	1.25	
R. B.	F.	18	'91	atrop	javal trial case	1.00	......	Student. Health excellent.
		21	'94	homat	javal trial case	2.00	1.00	
T. T.	F.	20	'91	atrop	skias trial case	0.50	......	Student and schoolteacher. Health excellent. Total increase, O. D. 1.00, O. S. 0.75.
		22	'93	homat	skias trial case	O. D. 1.25	0.75	
						O. S. 1.00	0.50	
		27	'98	none	trial case	O. D. 1.50	0.25	
						O. S. 1.25	0.25	

	Male or Female...	Age.........	Year of Examination.	Cycloplegic Used	Method of Examination........	Amount of Astigmatism......	Increase....	REMARKS.
P. C.	M.	12	'90	atrop	skias trial case	O. D. 0.50 O. S. 0.00	....	Mother astigmatic; no change in mother's refraction 10 years. Student, excellent health.
		14	'92	homat	trial case	O. D. 0.50 O. S. 0.50	...... 0.50	
		17	'95	homat	trial case	O. D. 1.75 O. S. 1.75	1.25 1.25	
H. C.	M.	14	'95	atrop	skias trial case	O. D. 2.50 O. S. 2.00	....	Brother to P. C. Student; rather frail physically.
		19	'00	homat	trial case	O. D. 3.50 O. S. 3.00	1.00 1.00	
E. C. W.	F.	34	'93	none	trial case	O. D. 0.75 O. S. 1.50	....	Housewife. Mother of several children. Excellent health.
		37	'96	none	trial case	O. D. 1.75 O. S. 1.75	1.00 0.25	
Z. W.	F.	14	'95	atrop	skias and trial case	0.50	.....	Daughter of E. C. W. School girl. Excellent health. Total increase 0.50 D.
		17	'98	homat	trial case	0.75	0.25	
		18	'99	none	trial case	1.00	0.25	
D. K.	M.	27	'98	homat	trial case	0.50	.....	Lawyer. Excellent health.
		29	'00	none	trial case	1.00	0.50	
L. K.	F.	18	'89	atrop	javal trial case	0.50	......	Sister to D. K. Excellent health.
		27	'98	none	trial case	1.50	1.00	
M. P.	F.	18	'91	homat	javal trial case	0.50	......	Schoolgirl and teacher. Excellent health. Total increase 0.75 D.
		19	'92	atrop	trial case	0.75	0.25	
		25	'97	homat	javal trial case	1.25	0.50	
L. P.	F.	24	'94	homat	trial case	O. D. 0.50 O. S. 1.50	....	Sister to M. P. Housewife. Health only moderate.
		27	'97	homat	trial casc	O. D. 1.50 O. S. 2.00	1.00 0.50	
V. C.	F.	15	'93	atrop	javal trial case	0.50	......	Schoolgirl and stenographer. Health fair. Total increase 1.00 D.
		17	'95	atrop	trial case	1.00	0.50	
		18	'96	none	javal trial case	1.50	0.50	
F. W. M.	M.	30	'87	atrop	trial case	0.50	......	Oculist. Health good. Hard student. Total increase 1.00 D.
		36	'93	none	javal trial case	1.00	0.50	
		43	'00	none	javal trial case	1.50	0.50	
N. N.	M.	27	'91	atrop	javal trial case	2.50	.....	Schoolteacher. Health not good in 1891. In 1899 no change in refraction. Health good.
		28	'91	atrop	javal trial case	3.50	1.00	
G. B.	M.	18	'92	homat	trial case	0.50	......	Student. Health excellent.
		23	'97	homat	trial case	0.75	0.25	
E. A. W.	M.	29	'92	homat	trial case	1.00	......	Newspaper writer.
		34	'98	homat	trial case	1.50	0.50	
J. M.	M.	25	'95	homat	trial case	0.50	....	Physician. Health excellent. Total increase, right eye (none left eye), 0.50 D.
		26	'96	homat	trial case	O. D. 0.50 O. S. 0.75	.... 0.25	
		27	'97	none	trial case	O. D. 0.50 O. S. 1.00	.... 0.25	
J. D. K.	F.	23	'95	homat	javal trial case	1.75	.....	Housewife. Health good.
		28	'00	homat	javal trial case	2.75	1.00	

error had increased, under atropin, to 1.25 D in each eye. And in 1900, four years after the third examination, the right eye had increased to 1.75 D, and the left eye to 2.00 D. Thus in seven years the total increase had been 1.25 D in each eye.

Mrs. J. D. K., age 23, in 1895, under homatropin, showed 1.75 D in each eye. In 1900, again under homatropin, the error had increased to 2.75 D in each eye; an increase of 1.00 D in each eye in five years.

R. M., age 18, student, under atropin, in 1889, 0.50fl D in both eyes. Seven years later, after several years practising of civil engineering, still under atropin, his right had increased 0.25 D, and the left eye had increased another 0.50 D to 2.00 D—a total increase in the left eye of 1.50 D, and 0.25 D in the right eye in eight years. It is to be remarked that Mr. M. habitually uses his left eye to look through the telescope of his surveyor's transit.

L. F., age 13, in 1900, under atropin, showed 3.50 of astigmatism in each eye. The next year this had increased to 4.25 D in each eye. In 1892 another increase of 0.75 D, a total of 1.50 D, was found in each eye.

Miss E. L., age 18, school-girl, in 1893, under atropin, showed 1.25 D of astigmatism in each eye. Seven years later, as Mrs. G. W., under homatropin, the right eye had increased 1.50 D, and the left eye 0.50 D.

Miss C. S., age 15, under homatropin, showed 2.00 in the right eye, and 4.00 D in the left. Five years later the right eye had increased 1.00 D, while the left eye had suffered no change.

J. B., age 15, 5.50 D myopic in each eye, showed, in 1892, 2.50 D of astigmatism in each eye. Three years later the right eye had increased to 4.00 D, and the left eye to 3.50 D.

G. P., age 7, under atropin, skiascopy, Javal and trial case, showed, besides 10 D of hypermetropia, 0.50 D of astigmatism in each eye. Three years later, Javal and the trial case showed 1.25 D astigmatism, while the hypermetropia had remained the same.

An examination of the table also shows several families of astigmatics in the members of which an increase of astigmatism has shown itself. Thus, Mrs. C. S. showed an astigmatism of 1.50 D in each eye, which remained unchanged in amount for ten years, to date. Her son, P. C., in 1890, at the age of 12 years, under atropin and skiascopy and the trial case, showed, in the right eye, an astigmatism of 0.50, and none in the left eye. Two years later, under homatropin, the right eye showed no increase, while the left eye showed an increase to 0.50 D. Three years after that both eyes had increased 1.25 D. H. C., son of Mrs. C., and brother of P. C., in 1895, at the age of 14, under atropin, skiascopy and the trial case, showed 2.50 D in the right eye and 2.00 D in the left. Five years later, under homatropin, and the trial case, the astigmatism in each eye had increased 1.00 D to 3.50 D in the right and 3.00 D in the left.

Mrs. E. C. W., in 1895, at the age of 34, showed 0.75 D in the right eye and 1.50 D in the left. Three years later, at the age of 37, the right eye had increased to 1.75 D, an increase of 1.00, while the left eye had increased only 0.25 D, but both now showed 1.75 D. Z. W., daughter of Mrs. E. C. W., age 14, showed, under skiascopy and the trial case, 0.50 D in each eye. Three years later this had increased, under homatropin, to 0.75 D in each eye. One year later there was a still further increase under homatropin, of 0.25 D—a total increase of 0.50 D.

D. K., lawyer age 27, showed, under

homatropin, in 1898, an astigmatism of 0.50 D in each eye. Two years later, without a mydriatic and with the trial case, there was an increase of 0.50 in each eye. L. K., sister to D. K., age 18, in 1889, under atropin and the trial case, showed 0.50 D in each eye. Nine years later, without a cycloplegic and under the trial case, she showed a total of 1.50 D in each eye.

Miss M. P., age 18, in 1891, showed, under homatropin, Javal and the trial case. 0.50 D in each eye. In 1892, under atropin, each eye had increased to 0.75 D. In 1897, five years later, under homatropin and the trial case, there was still further increase in each eye of 0.25 D. Miss L. P., sister of M. P., age 24, in 1894, showed under homatropin and the trial case, in the right eye 0.50 D, and in the left eye 1.50 D. Three years later, under homatropin and the trial case, the right eye showed an increase of 1.00 D, and the left eye an increase of only 0.50 D.

From this apparently convincing tabular exposition of astigmatism, as it has showed itself in my practice during the past fifteen years, it is evident that astigmatism, like myopia, increases in a certain (not to be neglected as only sporadic) number of cases. Just what causes this increase is not quite apparent. But, reasoning a priori, it is not unreasonable to assume that the same cause which effected a different curvature in the different meridians of the cornea may cause a still further difference in this curvature in a membrane, which, like the cornea, may be acted upon so readily by it. In this regard it may not be out of place to call attention to the fact that the increase in most all of the cases herein discussed has taken place at such ages as would, a priori, place the cornea under such condition as would render it yielding to the forces that caused its astigmatism in the first place.

HOSPITAL REPORTS.

Gynecological Clinic, Cooper Medical College, Geo. B Somers, M. D., in Charge.

Reported by Minora E. Kibbe, M. D.

PATHOLOGICAL REPORTS OF CURETTEMENTS.

Curettement with microscopical examination of tissue is not only an aid in confirming diagnosis, but is also a sure and rapid means of differential diagnosis in those diseases of the uterus which present somewhat similar symptoms. The pathological reports below give findings in a series of nineteen curettements. The patients gave a varying history of leucorrhea, dysmenorrhea, menorrhagia, metrorrhagia, and pain in the head, back, and abdomen. When there was an evident softened condition of the mucosa and the os was widely open, shreds of tissue were removed while the patient was on the table in the clinic. In other cases tissue was obtained by thorough curettage under anesthesia. The examinations were made in the pathological laboratory of Cooper College by Prof. Wm. Ophuls and his assistants. Case 1. Simple endometritis. "Mucous membrane with numerous small hemorrhages. Some of the glands are slightly dilated, and filled with cells and fragments of such." Case 2. Glandular endometritis. "The small piece sent for examination consists of mucous membrane with large, irregular glands, the walls of which are lined with one row of cylindrical epithelium. In spots the surface is covered with the same epithelium. In some glands there are a few red blood corpuscles and polymorphonuclear leucocytes. Many small hemorrhages in upper layers of the mucous membrane." Case 3. Glandular endometritis. "The endometrium contains many large glands. In spots there are small hemorrhages." Case 4. Endometritis. "Endometrium shows a few hemorrhages and some large, twisted glands." Case 5. Glandular endometritis. "The mucous membrane is hyperemic. In a few spots there are small hemorrhages. In spots the glands are large and corkscrew shaped." Case 6. Glandular endometritis. "Mucous membrane with many large, often corkscrew-shaped, glands; little interstitial tissue. Some of the glands contain polymorphonuclear leucocytes and a few red blood corpuscles." Case 7. Glandular endometritis. "The mucous membrane is rich in large, tortuous glands. Some of them are empty, others filled with mucus. In spots there are microscopic hemorrhages.

No muscular tissue seen in any of the specimens." Case 8. Glandular endometritis. "Mucous membrane contains many large glands. In spots the connective-tissue cells of the interstitial tissue are full of minute fat droplets." Case 9. Normal. "The mucous membrane shows normal structure. In spots there are fat droplets in the cells of the interstitial tissue." Case 10. Patient complained of intense dysmenorrhea. "Two pieces from the cervix normal. Uterine mucous membrane shows a few hemorrhages." Case 11. Fibroma of uterine mucous membrane and glandular endometritis. "Sections show large, tortuous glands in mucous membrane. In one of the pieces there is a nodule the size of a millet seed, which consists of fibrous tissue. Near the surface the fibrous tissue shows signs of fatty degeneration; one of the uterine glands is enclosed in the nodule." Case 12. Miscarriage June 29. Curettement September 7. "The pieces of mucous membrane of the uterus contain very many large glands. In one of the specimens there are two small, fibrous nodules, with hyaline degeneration in the center." Case 13. Patient complains of metrorrhagia; abortion six months previously. "The pieces sent for examination consist of uterine mucous membrane, with many large, tortuous glands, with high columnar epithelium. The cells of the interstitial tissue are large, but not so large as decidual cells. There are few lymphocytes. A few mitoses in connective-tissue cells. Mucosa in process of regeneration." Case 14. The patient gave history of profuse flooding, with failure of menses for six weeks. "The tissue consists entirely of very large cells with large, faintly staining nuclei. In spots these cells are filled with minute fat droplets. In a number of places there are large venous sinuses; some of them are partly or completely filled with thrombi. The tissue looks very suggestive of recent pregnancy, although not absolutely conclusive evidence. No chorionic villi." Case 15. Patient gave a history of possible abortion. "The glands in the mucous membrane are slightly dilated and filled with pus cells." Case 16. Ectopic gestation. "The piece of tissue passed is about the size and shape of a normal uterus, or slightly larger. Smooth and glistening on one side, shaggy on the other. Microscopic examination shows it to be a decidua. No chorionic villi." Case 17. Carcinoma. "Very small piece of inflamed tissue and involuntary muscle. There are many irregular spaces filled with large epithelial cells. Very many mitoses." Case 18. Carcinoma. "The piece sent for examination is covered on one side with thick layers of large, polygonal, epithelial cells. Groups of the same kind of epithelium are found also in the deeper parts of the tissues. Many mitoses in the layers and irregular groups of epithelial cells." Case 19. Epithelioma. "Tumor shows septa of connective tissue. Spaces between them filled with large epithelial cells. In center of cells nests some horny cells." Much can be learned from the character and amount of mucosa curetted away. Dr. Cullen has aptly said ("Cancer of the Uterus," page 31): "Under normal conditions rarely more than a teaspoonful of uterine scraping can be obtained. If the tissue is normal, the surface is smooth and velvety. When malignant trouble is present, the scrapings are usually abundant. The tissue is friable, and on careful teasing it will often be possible to make out threadlike, branching appearance on the surface. This is a condition never present in normal mucous membrane, and is practically pathognomonic of adenocarcinoma." During my stay in Baltimore, Dr. Howard Kelly operated on a case that illustrates the necessity of curettement in every case that involves the removal of the uterus. A patient was brought to the hospital by a country doctor, with a diagnosis of carcinoma. While he was operating, assistants, under the direction of Dr. Cullen, examined the curetted material, and in twelve minutes returned with a diagnosis of placental villi. The slide was shown to those interested. The result of the rapid diagnosis was one less hysterectomy. As Dr. Kelly continued the operation, he told us of a case just the reverse. Within a month a woman had been brought to him considered to be suffering from the effect of abortion. While he finished curetting, shreds of tissue were frozen, stained, and mounted, and carcinoma demonstrated. Here the early diagnosis and removal gave hope for a permanent cure.

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THE MEETING OF THE STATE MEDICAL SOCIETY.

The annual meeting of the Medical Society of the State of California, which will be held in San Francisco in April, promises to be one of the most important in the Society's history. Many questions of vital concern to the future of the profession of this State will demand the attention of the members. The plan to amalgamate the medical profession adopted by the American Medical Association will come up for consideration, and especially its bearing upon county societies; the question of dues, representation, etc. Circular letters have been sent to the members by the secretary showing the object of this scheme and how far the work has advanced. A committee on revision of the Constitution and By-laws has been at work for some months, and will, no doubt, have its work completed in due time. The object of this proposition is far-reaching in its effect, and will be most beneficial in raising the standard of the profession and giving unity of force and power to all societies, great and small. The order of the day seems to be unionism, and certainly no body of men and no profession needs a consolidation of aims and interests as does the medical fraternity. This is as true of our State as of the whole country. The consolidation of our county societies with the State Society, as our national body, will undoubtedly bring many advantages that will react for the common good. It will bring out the fact that we have had and now have a State Society; that it is not confined to any one section, and that its aim is to include all worthy practitioners within its fold, and to maintain the dignity of the profession. It is urgent, therefore, since matters of so great importance will come up for discussion, that each and every regular practitioner of the State will join his county society and make the San Francisco meeting a success. The Committee of Arrangements is working hard to meet the demands of those who will attend, and will offer a most creditable program.

AN ERROR AND CORRECTION.

In our issue of January, 1902, a paper was published on "The Diagnosis and Treatment of Apendicitis," by J. C. Stinson, M. D. This paper was written by C. R. Harry, M. D., of Stockton, Cal., and was read before the Northern District Medical Society at its meeting in November last at Sacramento. Dr. Stinson's paper on the same subject appears in this issue, and we trust that the profession will generously credit Dr. Harry for his excellent paper, and be as considerate for the error as possible.

SOCIETY PROCEEDINGS

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE, AND THROAT SURGEONS.

Regular Meeting December 5, 1901.

Dr. F. B. Eaton, the president, in the chair.

POSTERIOR STAPHYLOMA.

Dr. Geo. H. Powers presented a case of extreme posterior staphyloma. There is not much to say about this case. I saw the case to-day, and it struck me that the staphyloma present was slightly different from anything I had ever seen before, especially in relation to the depth of the staphyloma.

Dr. R. D. Cohn: The history of the case is rather interesting. The lady states that the blindness in the eye followed an attack of typhus fever when a girl of about 15 or 16 years.

"The Use of Camphoroxol and Menthoxol in Suppuration of the Middle Ear" was read by **Dr. A. E. Phelan.** [Published at page 64.]

Dr. Powers: I would like to say that I have used these oxols to a slight extent, more on the nose than on the ear. I have used them in a few cases of purulent ear trouble, with some satisfaction, but I have not followed the matter up as Dr. Phelan has. It seemed to me that they were quite beneficial in some nasal troubles with purulent conditions. I have seemed to find a very decided improvement from their use, especially the camphoroxol. I use the camphoroxol almost entirely. I used the menthoxol first, but did not like it as well as the other oxol.

Dr. W. A. Martin: I would like to ask if that (the camphoroxol) effervesces as much as the other?

Dr. Phelan: Just about the same.

Dr. Martin: I have been opposed radically to the use of peroxid of hydrogen in the ear for the last four or five years. Pretty nearly the only trouble I ever experienced was from the use of these peroxides. Several times I have had a decided mastoid tenderness, which I thought was due to the use of these peroxides, and for that reason I have been slow to take up the camphoroxol and the menthoxol, although I have seen very favorable reports in the journals from them; but judging from the time that it has taken to cure these cases that Dr. Phelan has reported, I do not know that he gets any better results than I have succeeded in getting with the ordinary remedies. While it is a satisfaction to know that they are successful in the treatment of these cases, still we have other remedies that are equally as good. However, as I say, I would not denounce the use of the remedies without understanding fully what the combined action of this, I might say, peroxide treatment would be; but I would be very unwilling to use anything that would fizz up like peroxide in the ear.

Dr. Payne: I would like to ask Dr. Phelan how much time has elapsed since the treatment of the majority of the cases.

Dr. Phelan: I think the last case that I cited has been three months. And the other case of mastoid symptoms has been nearly five months, I think.

The President: Doctor, I would like to ask you if you have had any experience in using these oxols in sub-acute or acute cases.

Dr. Phelan: Yes.

The President: Do you find them effectual?

Dr. Phelan: I have had very effectual results.

The President: Do you dilute them?

Dr. Phelan: Yes; there is only a three per cent solution of peroxide of hydrogen in it, and I dilute it so that I have a 10 per cent solution. I tried it in an acute case about three weeks ago, and the case was cured in about ten days or a week.

The President: I asked the question because I have tried menthoxol in a case passing from the acute into the chronic stage, and I found it rather irritating.

Dr. Phelan: I tried menthoxol at first, and I was not well pleased with it, as I was with camphoroxol, so I have discarded that, and have not used it for six months, I think.

Dr. A. B. McKec: In regard to this case of chronic suppuration, I think that our success depends a great deal upon the class of cases which we chance to meet. I thought at one time that chronic suppuration was a satisfactory thing to treat. I had a series of cases which grew better. Suppuration ceased, and they were practically cured with the ordinary methods of treatment. I grew to believe that simple cleansing of the ear, and the use of a mild solution of nitrate of silver, was almost a panacea. Then I stumbled onto a case which had been treated by a number of others, and the case would not yield to this remedy. I had others of the same character, and nothing that I could do would make any difference in those cases. They did not have mastoid symptoms, and they were not much trouble, other than they had a certain amount of suppuration, which rendered it necessary for them to be in the hands of the doctor. Those cases all proved to have somewhat of a cholesteatomatous character, as the operation afterwards showed; and it seems to me that, where this condition prevails, and where none of these remedies can be of avail, we could always use them to make a definite diagnosis. In some of these cases there would be no difficulty in making the diagnosis, but in others there was nothing, perhaps, other than the peculiar pallor of the labyrinth wall, which suggested the trouble. It would certainly be a very valuable thing if we could find any remedy that had a special value in these chronic suppurations. I tried for some time the method used by Lucal. He claimed that $\frac{1}{1000}$ solution of formalin used precisely and regularly in these cases had very much reduced the number of his mastoid operations and chronic suppurations. I did not find in my cases that it made a particle of difference, and for a while I had so much difficulty with cases, and I had a number of operations for chronic suppurations, that I began to think I had altogether forgotten how to use the remedy. And I have not nearly so much faith in my ability to cure chronic suppurations as I once had.

The president stated that he would like to hear from Dr. Martin with regard to his case of septum trouble, reported at the last meeting.

Dr. Martin: There were features about that case that puzzle me, and the microscopic report gave nothing. When the man came to me, I put him on twenty grains of iodin three times a day. Under that treatment the tumor healed very nicely, and I discharged him, and told him to keep on using it; but he did not have the bottle refilled. He came back to me two weeks later, with a most beautiful crop of mucous plaques. Besides that, he had a roseola all over the skin, so that, while the history was very indefinite, the symptoms were very definite. At the same time it does not explain the peculiar character that the tumor in the nose assumed. If you remember, I told you I sent it to Dr. Montgomery for analysis. He did not diagnose it as a malignant neoplasm or as a gumma, but thought it had the characteristics of an inflammatory tumor, that it had some features that would indicate sarcoma, and some that might indicate epithelioma. As I understand it, a gumma is a tertiary symptom, and plaques and roseola are the secondary, and the thing had rather reversed itself. So that, if we should accept this as a gumma, we would have to consider that the disease had reversed itself, as far as the symptoms are concerned, which, of course, is impossible.

The President: Was it not the beginning of a gumma?

Dr. Martin: Well, it was a growth similar to a gumma, but the chances are it was not.

Regular Meeting January 16, 1902.

Dr. F. B. Eaton, president, in the chair.

HAND-MAGNET, HIRSCHBERG.

FOREIGN BODIES IN THE EYE.

Dr. A. Barkan exhibited the Hirschberg hand-magnet, and demonstrated its use. He showed that it supports a steel rod weighing 19 pounds. Nevertheless, in three cases of foreign body in the depth of the eye, this magnet, on approximating it to the eyes. caused no pain and no change of position of the foreign body, and he was obliged to use the Haab magnet to accomplish the extractions, as he did not wish to put the probe tips of the Hirschberg magnet into the eye. When he had succeeded with the Hirschberg magnet, the foreign body was in the anterior chamber, hence he considered it an unsatisfactory instrument when the foreign body is in the depth of the eye. Dr. Barkan also presented a patient, a man who had stated that, while working with a pick, he was struck on the eye with a piece of stone. On examination, a wound was seen in the upper part of the cornea. Dr. Barkan had doubted this statement of the foreign body being a stone, as the Hirschberg sideroscope gave a positive reaction. Hirschberg's hand-magnet caused no pain, but the Haab magnet gave the pain reaction, and the foreign body appeared in the anterior chamber and was extracted. It weighs 1.12 grains and is one-eighth inch in diameter, and on microscopical examination by an expert was found to be quartz rich in iron. The injury occurred four weeks ago; the iritis is subsiding, but the globe is slightly tender to the touch. Dr. Barkan presented another patient, a man whose eye had been penetrated by a bit of metal 22 months ago. He had consulted a doctor, but with no result, and had suffered for nearly two years. On examination, a piece of metal about 3 mm. long and 3 mm. wide was seen on the iris, and a condition of siderosis, there being fine deposits of iron on the capsule and near the edge of the pupil. Vision was $\frac{20}{70}$; there was no pain. An incision was made in the cornea, and the bit of metal readily extracted with the Hirschberg new hand-magnet. The eye is now recovering, and the vision is now $\frac{20}{40}$, with correction, and he reads Snellen .5. By means of a pig's eye in which he made a corneal incision, and another in the sclerotic, inserting through the latter into the vitreous a bit of metal, Dr. Barkan demonstrated that it was necessary to introduce the pole of the Hirschberg hand-magnet through the corneal incision about 3 centimeters into the eye before the metal was withdrawn.

Dr. Pischel said that the giant and the hand-magnet can supplement each other. If, for instance, the giant magnet has drawn a small piece of steel from the vitreous into the anterior chamber, the hand-magnet may be introduced into the anterior chamber, and remove the foreign body more gently than the giant magnet. The hand-magnet can naturally be handled with greater ease and accuracy, while he found several times great difficulty in placing the head of the patient just so before the giant magnet that the tip touched the center of the corneal wound. During these maneuvers the foreign body follows on Descement membrane the tip of the magnet, and may easily scratch it. Forceps of non-magnetic metal are useful. A few days before he had removed a long, flat piece of steel from the vitreous through the widened scleral wound. The tip on the foreign body appeared in the wound, but the ragged edges held the fine steel plate firm as it crossed the slit of the wound. He therefore got hold of the protruding edge, turned it, and removed it with ease. But his forceps were attracted by the magnet with such great force that he had difficulty in controlling it. He therefore suggested the use of forceps of non-magnetic metal, nickel-plated brass or aluminum, for instance.

Dr. Redmond Payne asked what objection there would be to making the point of the magnet small, so it could be inserted into the eye without doing injury. He also asked if the passage of the foreign body through the corneal lens and iris did less harm than its penetration through the ciliary body.

Dr. Geo. H. Powers asked what path the foreign body generally took in coming out.

Dr. Barkan, in closing the discussion, said in reply to Dr. Powers, that the foreign body generally came out by the path by which it entered. In reply to Dr. Payne, he said some of the wounds had been in the ciliary body, but they had readily healed. The result was rather in proportion to the septic or nonseptic condition of the foreign body. He agreed with all Dr. Pischel had said. He uses a pair of nickel forceps. He had never used forceps in extracting foreign bodies, but thought they could be used.

MACKENZIE-DAVIDSON LOCALIZER.

Dr. L. C. Deane demonstrated his modification of the Mackenzie-Davidson localizer, and exhibited photographs of two cases of localization of bird shot. He had modified the apparatus so that a larger plate could be used, and added another vertical wire.

Dr. Payne spoke of the value of the apparatus as modified by Dr. Deane, especially in locating shot and other non-magnetic foreign bodies, whether in the eye or orbit. He had had one case where Dr. Deane had localized the foreign body. Dr. Barkan said the apparatus is very valuable; he had seen Dr. Mackenzie-Davidson demonstrate its use.

PEDICULUS PUBIS.

Dr. Barkan exhibited a specimen of pediculus pubis on eyelashes. They came from the eyelid of a young woman of doubtful reputation who had made use of a towel carelessly.

SIDEROSIS.

The president, on behalf of Dr. A. H. Voorheis, exhibited, apropos of Dr. Barkan's case of siderosis, a beautiful specimen illustrating this condition, it being a complete crystalline lens which had been extracted in its capsule, and of a bright green color. In it could be seen a fragment of iron, which had given rise to the condition of siderosis.

SAN FRANCISCO MEDICO-CHIRURGICAL SOCIETY.

Regular Meeting December 2, 1901.

Henry Gibbons, Jr., the president, in the chair.

ERYTHEMA FOLLOWING USE OF DIPHTHERITIC ANTITOXIN.

Dr. F. P. Gray read a paper on "Erythema Following Use of Antidiphtheritic Serum." [Published at page 53.]

Dr. J. O. Hirschfelder: Personally had little experience with the antitoxin of diphtheria and none with the accidents of erythema, etc., described by Dr. Gray. He believed that it would be only a question of time when antitoxins in general would be manufactured in the laboratory, without the intervention of the animal, i. e., from the bacteria themselves. It has already been done in the case of tetanus by Tizzoni, and eventually will be so in diphtheria and other infectious diseases. It is a chemical question, and is sure to be solved. He looked forward to a day when antitoxins will be produced in the form of a dry powder, which will be a stable chemical substance of definite composition, which can be stored, and which will be free from the other and often deleterious ingredients of the serum of animals. These untoward symptoms described in the paper are due, not to antitoxin itself, but to these other ingredients of the serum of the horse. A few years ago the child of a physician in Germany was given an immunizing dose of antitoxin, and in a short time died. At the autopsy there were no findings to account for the death. The case gave rise to a great deal of discussion, but the same serum had been used in many cases, with no bad results. It is probable, as suggested by the histories of the cases reported in the paper, that these substances in the serum are much more active for harm in some individuals, i. e., some individuals exhibit greater susceptibility to them than others do. In Germany the antitoxin is manufactured by authorized firms, under the inspection of the government, which charges a very heavy tax for this inspection. He thought it was so arranged to keep out competition. He would expect the antitoxin eventually to be prepared, as he had said, in a solid form, and kept sterile, just as cocain, morphin, strychnin, etc., are kept for hypodermic use.

Dr. H. Gibbons, Jr.: Had had no experience with these accidents of serum injections, though he had used diphtheria antitoxin a good many times; skeptical when the remedy was first introduced, he had become a thorough convert to its use. He wished to call attention to the fact that the diagnosis of diphtheria is difficult in many cases. Not long since he had called to see a child suffering from difficulty in breathing; his son examined the child, and said that intubation might be necessary. The child was blue, and breathing with the greatest difficulty. It was four years of age, with a history of having been perfectly well until within three or four days, and then it had had merely a little soreness. Beyond a little redness of the throat, there was nothing to be seen. He took it for a case of catarrhal laryngitis; the child had very little fever. He put in a tube, and the child breathed perfectly well. The next day he gave 1,000 units of diphtheritic antitoxin. He took a swab, and, rubbing it on the pharyngeal wall, sent it to the Health Office, where diphtheria germs were found. After three days he took the tube out, but in six hours it had to be reintroduced. The child made a remarkably rapid return to health. A month ago he was called to see a child whose throat was in such a condition as to lead him to make a diagnosis of a mixed infection, for which he gave an iron preparation. In a couple of days the child was much worse, showing large gray patches on the tonsils. The Health Office reported that the swab sent from the case showed no diphtheria bacilli. However, he gave 1,000 units of antitoxin, and next day the child's temperature was normal. Another child seven years old had merely a slight hoarseness. There was nothing abnormal to be seen in the throat beyond a doubtful patch or two on the tonsils. The Health Office reported no diphtheria bacilli on the swab from the case. He gave four grains of Dover's powder, and the child seemed well in the morning, though there was still slight hoarseness. The next night he gave another dose. The child remained about the same for a week, when his respiration became rapidly affected; and when he saw him, he was breathing with the greatest difficulty. Intubation was done, and in two or three minutes the child was comfortable. He gave then 1,000 units on general principles, and within two or three days the child was well. In the second case he thought he got no bacilli, because of the fact that iron had been used. Dr. Gibbons reported a number of such cases where, in the absence of an accurate diagnosis, recovery had been rapid after the injection of a moderate dose of antitoxin of diphtheria.

Dr. Rixford: Had had no experience with erythemas or other uncomfortable complications due to antitoxin of diphtheria, though he had used the remedy in a limited number of cases. Two cases were worthy of mention, viz., two brothers who had pharyngeal diphtheria which invaded the eustachian tubes and the middle ear in both, with rupture of the drum-head and discharge of diphtheria membrane through it, as well as extensive involvement of the nose. In each case the injection of 1,000 units of antitoxin was followed by recovery so rapid as to be most remarkable.

NEW METHOD OF MAKING PLASTER-OF-PARIS CASTS.

Dr. E. Rixford demonstrated a simple and effective method of making plaster casts of the extremities by means of plaster-of-Paris bandages wound on a part and cut off on a strip of sheet tin or zinc, and then sprung off and wound with an additional plaster bandage. This mould is then filled with plaster and water of the consistency of cream, and the mould is stripped off as soon as the filling has set. This method of making casts is sufficiently convenient to enable one to make a permanent record of the deformities about the bones or joints for future reference. He used these casts particularly for the instruction of students. A cast of a deformed member is of far greater value as a record of the deformity than a photograph, for it is full size and exhibits the deformity in its true dimensions, and may be viewed from any side. Dr. Rixford exhibited a number of such casts of deformities resulting from fracture of the bone at the ankle-joint, before and after treatment. He described the occurrence of fracture of the malleoli and the resulting deformity, and showed by the casts that the foot is abducted or adducted according as the outer or the inner malleolus is fractured higher. In the treatment of such cases he recommended, as having many advantages over splints, the proper application of the plaster-of-Paris bandage, even in fresh cases. He cautioned his students that, if this dressing is used in fresh cases, the limb should be well enveloped in cotton, to allow for swelling, and the bandage should be removed in a day or two, and another applied, and this repeated at frequent intervals, to avoid the results of too great pressure, and to compensate for the shrinkage when the swelling goes down. In typical Pott's fractures the backward displacement is difficult to overcome with any of the ordinary splints, such as that of Dupuytren, but with plaster bandages in skilful hands, this, as well as all other deformities, is reduced, and the corrected position maintained. In typical Pott's fractures generally the foot should be put up in adduction, i. e., in the opposite from the ordinary deformity, to overcome a tendency to spreading of the joint, due to tilting of the lower fragment of the fibula. In fracture of the lower end of the shaft of the tibia and fibula, care should be taken in applying the plaster bandage not to support the leg by the heel or toes, as the weight of the rest of the leg would surely cause a posterior angular deformity to take place at the point of fracture. He again cautioned against primary plaster bandages being put on with insufficient padding, and emphasized the necessity of removing such primary casts early. He told of a case of fracture of the radius that had been put up in plaster, the child going to the country for a couple of weeks without the knowledge of the physician. When the plaster bandage was removed, the ends of the radius were widely separated, and could not be approximated without operation.

Dr. C. N. Ellinwood had been called to see a fracture of the lower third of the femur, which had been reduced by the attending surgeon and put up in plaster three weeks before. When he was called, the leg was loose in the plaster and there was marked projection of the upper fragment, the plaster having long since ceased to give support. He had seen another method of applying plaster to fractures as primary dressings, in which a sort of splint was made of plaster bandages only partially encircling the limb, and held in place with ordinary muslin bandages. This arrangement enabled the surgeon to inspect the fracture frequently and to readjust the splint as required by shrinkage of the limb. Doubtless the same principle could be applied to the fractures of the ankle.